Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Nineteenth Annual Report.

(Concluded from page 539.)

First Day, Afternoon Session.

The Association was called to order at 3:20 o'clock by the President.

On motion by Dr. E. C. Spitzka, of New York, the by-laws were suspended, and Dr. William A. Hammond, of New York, was elected honorary member, his name having been proposed by Dr. Charles K. Mills, of Philadelphia, and others.

DR. CHARLES L. DANA, of New York, then read a paper on

HEREDITARY TREMOR,

a disease heretofore undescribed, and consisting of a fine tremor constantly present during waking hours.

REMARKS ON DR. DANA'S PAPER.

DR. J. J. PUTNAM, of Boston.—I have seen these cases, one recently which conforms with what Dr. Dana says, and there is no other disease in the family. There is another example of this kind in our vicinity who has also tremor of the head that is not senile.

DR. F. X. DERCUM, of Philadelphia.—I have seen cases of this kind, and instances where the whole family had the same tremor. In one case there is also decided tremor of the head.

DR. GRAEME M. HAMMOND, of New York.—I would ask Dr. Dana if the form of tremor he describes is the only variety of tremor that he attributes to hereditary influence. I think he will recollect one of my patients at the Post-Graduate School and Hospital, a case of the choreic form of tremor which certainly

was hereditary. Dr. Seguin also saw the case. It was impossible for the man to sit upon a chair, he was unable to walk, and the whole case was very similar to chorea in its manifestations. The patient could only trace the disease as far back as his mother, who had it and died in consequence of it. A brother had the same disease and also a sister; and a niece whose father did not have it. After a certain length of time they all died, as far as could be ascertained, from the disease. It did not appear in this man until about the age of thirty-five years, and then progressed rapidly up to the state in which I saw him and there remained. He had also mental failure towards the end, delusions of various kinds, etc., and the other members of his family had been afflicted in the same manner.

DR. DANA.—I recollect Dr. Hammond's case, but I was not aware that it had an hereditary character. I regarded it as *tic convulsif* rather than tremor. At least I did not regard it as belonging to the type which I have described, and which I think is rare. A good many persons have considerable neurasthenic tremor for a considerable portion of their lives, which is not hereditary. The peculiarity in this class of cases is their very striking hereditary history. In some cases which I saw, the head under conditions of great excitement or extraordinary nervous depression oscillated, but not ordinarily.

DR. GEORGE W. JACOBY, of New York, read a paper on

MICROSCOPICAL STUDIES IN A CASE OF PSEUDO-HYPERTROPHIC PARALYSIS.[1]

REMARKS ON DR. JACOBY'S PAPER.

DR. F. X. DERCUM, of Philadelphia.—I have been very much interested in the theory and the pathological report made by Dr. Jacoby. I had occasion last autumn to examine a case of atypical muscular hypertrophy, occurring in an adult, which showed irregular places of hypertrophy, but not pseudo-hypertrophy. I also saw a case in which there was some hypertrophy of the connective-tissue elements and changes in the muscles. I have seen cases of interstitial myositis and myositis proper, but whether the connective-tissue changes are secondary is difficult to say. The drawings exhibited by Dr. Jacoby, however, answer the question in his case almost beyond doubt. In the specimens which I

[1] See p. 577 of this volume.

studied I used osmic acid to determine whether or not there was fat in the muscle fibres, and the droplets were present in rather large percentage.

DR. J. J. PUTNAM, of Boston.—One remark which Dr. Jacoby made calls to mind an interesting point which might be further commented on, and that is a mixture of the degenerative process and the true inflammatory process. Certainly it seems to be marked here, and it was in a case of hereditary ataxia in which I examined the spinal cord. Besides the marked changes, unquestionably due to abnormal development of certain portions of the spinal cord, there was evidence of true inflammatory action. Also we see something similar in the degeneration of nerve fibres with changes in the connective tissue surrounding them.

DR. B. SACHS, of New York, then read a paper

"ON ARRESTED CEREBRAL DEVELOPMENT, WITH SPECIAL REFERENCE TO ITS CORTICAL PATHOLOGY." [1]

REMARKS ON DR. SACHS' PAPER.

DR. C. K. MILLS, of Philadelphia.—A paper of this kind should be discussed, and yet it is difficult to pick out the points for discussion. The observations are very interesting and important; especially the histological or pathological portion. The facts which Dr. Sachs has so clearly demonstrated prove that, in these cases, the changes are primarily the result of inhibition of the development of the nervous elements proper, and not the result of some preceding inflammatory process. There may be observations of this kind upon record, but they are few, if any, and added to the work which has been done in this society and elsewhere on the gross condition, it marks an important advance in the study of the pathology of idiocy. I congratulate Dr. Sachs on the manner in which he has presented the case for our consideration. We wish to go still further and eventually have studies not only of the fissuration of the cerebral surface and its histology, but of the histology of the entire cerebrum and spinal tracts. I should be glad to hear from Dr. Dercum, who has been doing some work in this direction.

DR. F. X. DERCUM, of Philadelphia.—I have not done much work on idiots' brains, but something in the study of the brains of the insane. The only brain of an idiot which I have examined

[1] See p. 541 of this volume.

was not one of inhibition of development, because there was marked sclerosis of the skull and enormous thickening with external ossific pachymeningitis, and also the pia mater was very much adherent, these changes doubtless being secondary to the inflammatory condition. What I saw microscopically were distorted cells, with processes atrophied, nuclei absent, and I found also a certain amount of proliferation of the neuroglia.

DR. MILLS.—The report of this case will help us a little further on, possibly, in the classification of idiocy. The classifications which we have in ordinary text-books are of no earthly account for scientific purposes. If we go into any of our large Asylums for feeble-minded children and attempt to study the cases from the stand-point of our present classifications, it is almost, if not entirely, impossible to do so. Studies of the kind Dr. Sachs has made will help us in that direction, and if continued we may soon arrange a respectable classification for idiocy, instead of having to consult such old-timed classifications as those of Ireland and others.

DR. R. W. AMIDON, of New York.—If I understand him rightly, Dr. Sachs argues that the absence of any gross lesion on autopsy is against there ever having been gross lesions present.

That may be perfectly true regarding inflammatory processes or cerebral lacerations, etc., but I do not think that it can be true with respect to hemorrhages, especially intra-meningeal hemorrhages. I have seen two cases which were very much like this, and in which there was found on autopsy no gross lesion apparent, but in which there was almost indubitable clinical evidence of previous existing hemorrhage. In my opinion, hemorrhage of considerable size, and in such location as to very much impair the growth of the central nervous system, may occur and be so completely absorbed as to leave no trace that could be seen at autopsy. While I have no distinct incontrovertible proof that such is the case, that is my impression, and I would like to ask Dr. Sachs if that has occurred to him as a possible condition that existed and inhibited the growth of the centres, and left a change which at the time of the autopsy seemed to be developmental.

DR. SACHS.—I had thought of an intra-uterine causation, but as to meningeal hemorrhage as the cause, I do not favor that view for the reason that an intra-meningeal hemorrhage sufficient to cause these widespread changes would have had to cover almost

the entire cortex, for these histological changes were noted in all parts of the cortex, and there would have been other and more serious changes following in the wake of such an hemorrhage: we might have expected thickening of the meninges, changes in the blood-vessels, etc. Besides, the clinical condition would have been reversed, and the child would not have been brighter at birth than two or three months afterwards. If it had been due to an intra-uterine hemorrhage, the mental condition would have been very poor at birth and improved somewhat afterwards. I have no doubt that the traumatic factor had something to do with this inhibited development, possibly through changes in cerebral circulation, but how this was effected is still a mystery. There was no convulsive movement, which is an exceedingly important factor in computing the presence or absence of cortical irritation in the meningeal thickening. It seems to me that there was a process away from the meninges.

I would like to say that during life I had concluded that this process was not meningeal, and could not be in the ordinary line of idiocies. In this case I argued that the process was in the cortex and not an irritative lesion upon the surface. My idea is that the cells developed to a certain stage and that from that time on, whatever the cause may have been, their growth was inhibited. For that reason we find but few cells which show atrophy, *i. e.*, cells which had grown to their full extent and then had undergone retrograde changes.

DR. DERCUM.—The paucity of the blood-vessels as compared with the number present in normal sections is very apparent.

DR. SACHS.—I have found a fair number, possibly the ordinary number, of perfectly normal capillary vessels in all the sections examined.

Thursday, Second Day, Morning Session.

The Association was called to order at 10:30 o'clock by the President.

DR. JAMES J. PUTNAM, of Boston, presented microscopic sections with a report of a case of

"SARCOMA INVOLVING THE INTRAPELVIC NERVES."

The following case is offered as a contribution to the clinical and pathological history of "paraplegia dolorosa," due to the invasion of the intra-abdominal nerves.

The facts observed harmonize fully with those reported in the recent excellent summary and analysis by Dr. R. W. Amidon,[1] but the case is worthy of record because of the very late appearance of anything that could be called cachexia or of the enlargement of the lymphatic glands; because of the secondary and indirect involvement of the spinal cord; and because of the very notable fluctuation of some of the symptoms.

The case is that of a gentleman of seventy-two,[2] of excellent previous history and habits, and no family tendency which could be expected to make him liable to sarcomatous disease.

The first symptoms showed themselves about one year and a half before his death, and consisted in pain in the middle toe of the left foot, recurring frequently for some months, and occasionally throughout the remainder of his life.

Six months later, the whole left leg and the sacral region became severely painful, the pain confining itself, however, to the posterior and outer surfaces of the thigh, the outer side of the leg, and the outer half of the foot. The pain was accompanied with some paræsthesia, and this was especially true of the outer half of the sole of the foot, which felt, when he trod, as if there were small marbles beneath the foot, a sensation which never wholly left him.

Although a bilateral distribution of the symptoms is usually so early and so valuable a guide to the diagnosis, the right leg was not attacked in this case until nearly six months after the left.

Meantime, the pain in the left leg had greatly lessened during a trip to Florida.

I first saw the patient six months before his death, and six weeks previous to my visit pain, constant and of a grinding, aching character, had begun in the right leg, confined mainly to the posterior and outer sides of the thigh, and had renewed itself in the left leg.

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[1] "Malignant Disease of the Spine," etc., N. Y. Med. Journ., Feb. 26th, 1887.

[2] Seen by me in conjunction with Dr. Norton Folsom, of Cambridge.

Walking had become difficult on account of progressive muscular weakness; this weakness was found to affect not only the muscles supplied by the sciatics, but also the extensor quad. cruris, and the psoas and iliacus. The muscles of the calves were relatively free. All the affected muscles were somewhat atrophied, but none of them had lost their faradic reaction or showed any degenerative response to galvanism. A very slight diminution of tactile sensibility was found either at this examination or somewhat later, in the skin of the buttocks, in the vicinity of the arms, but nowhere else.

Cutaneous hyperæsthesia was not present to any marked degree, and yet he found applications of galvanism, even of moderate currents, so very painful as to suggest an unnatural sensitiveness in this respect.

This absence of marked anæsthesia, combined with the fact that there was but little sensitiveness to deep pressure in the affected muscles (the thighs only were somewhat sensitive), and none along the nerve-trunks, in spite of the great pain and weakness, was significant as against a primary multiple neuritis, even had the distribution of the pain favored that diagnosis.

No cachexia or anæmia could be detected, and none showed itself at any time until within two or three months of the patient's death, when he was exhausted by pain and discomfort. Indeed, it is to be remembered that a purely local sarcoma, as this proved to be, not involving the organs of digestion, need not seriously impair the nutrition or the constitution of the blood for a long period.

The knee-jerk was absent on both sides.

No tumors could be discovered by rectal examination.

There was no disorder of micturition either at this time or later.

Several examinations of the urine were made with negative result, except that lead was found on two occasions and by different chemists.

This examination for lead was made at the suggestion of Dr. S. G. Webber, who saw the case in consultation with Drs. Folsom and Wyman and myself as a *possible*

cause of the neuritis. The entire absence, however, of symptoms referable to lead-poisoning makes this an interesting case, in evidence of the fact that lead need cause no symptoms, even when present, as one of these analyses showed, so as to be eliminated in considerable quantity.

During the seven months, from my first visit until the patient's death, the disease made on the whole steady progress; but it is noteworthy that the left leg, which was the first to be attacked, became after a time almost wholly free from pain, and remained so for several months, though it did not recover its strength. It was also noticeable that no glandular enlargements could be detected until about two months before death, when a bunch was noticed in the right groin which rapidly increased in size. Finally the new growth made its appearance in the skin over the lower part of the back, the buttocks, and eventually the abdominal walls. Before the actual discovery of the growth, the elements in the diagnosis were signs of neuritis involving a number of adjacent nerves on both sides of the body, causing progressive weakness with severe but fluctuating pain, yet without complete paralysis, and the absence of evidence of acute generalized idiopathic neuritis, both in respect to the distribution of the symptoms, the rapidity of the muscular atrophy, or the electrical reactions.

Autopsy by Dr. H. Fitz.

Dense nodulated tumor in right groin (infiltration of skin of back and abdomen not mentioned).

Head not opened.

Nothing abnormal found on examination of heart and lungs, excepting œdema of latter and pleural adhesions.

Old peritoneal adhesions about liver; no calculi. Liver fatty infiltrated.

Spleen hyperplastic; normal size.

Kidneys somewhat atrophied.

Bladder dilated; contains half a pint of urine; prostate moderately enlarged.

Nothing abnormal in stomach and intestine, with the exception of a sarcomatous infiltration of a loop of ileum

some three inches long; no special constriction of the calibre; slight ulceration of the surface.

The perinephritic fat tissue, the lumbar muscles, the pelvic connective tissue (moderately), the muscles and glands in the inguinal and iliac regions infiltrated with a homogeneous grayish-white dense tissue. The sciatic and lumbar nerves, especially the right, as they emerged from the pelvis are infiltrated with the same tissue.

The vertebræ were not eroded. The lumbar portion of the spinal cord was removed for examination; on inspection it appeared healthy. The structure of the growth was largely cellular; the cells round, somewhat larger than leucocytes, and contained single and double nuclei; the intervening fibrous tissue moderate in quantity. The structure was regarded as that of a sarcoma, round-celled.

The clinical points of chief interest relate to the early diagnosis of this serious disease, and in this respect the signs of severe and yet partial irritative neuritis seem to me eminently important, and later the fluctuating character of the symptoms. One pathological point concerns the relation, which I think is a close one, between the neuritis and poliomyelitis—a relation which shows itself in a number of ways.

REMARKS ON DR. PUTNAM'S PAPER.

DR. C. K. MILLS, of Philadelphia.—I did not hear the fore part of Dr. Putnam's paper, but as I understood it the case was supposed at one time to be one of sciatica. The report is interesting in several particulars. First, with reference to the question of diagnosis. Several years ago, my attention was directed to the fact that the diagnosis of sciatica was occasionally made when there was intra-pelvic sarcoma, simple or involving the bones of the pelvis.

One of my lectures at the Blockley Hospital in Philadelphia was reported in which I took occasion to give the history of a case of supposed sciatica, but which proved to be one of intra-pelvic sarcoma. I have seen several of these cases; one at St. Mary's Hospital with Dr. M. O'Hara, where the same diagnosis of sciatica had been made, but the continued examination showed

that it was undoubtedly a pelvic sarcoma. In the Philadelphia Hospital, also, a patient had been treated in different departments, and in all it was supposed that it was a case of sciatica. Dr. J. W. White and myself finally made a careful examination, and we found diffused disease of the acetabulum, and at the autopsy it was demonstrated that it was malignant in character.

The differential diagnosis of sciatica is one of practical importance, and the suggestions with reference to neuritis and poliomyelitis I regard as of considerable interest. My intention had been to bring up that part of the subject for discussion at a later period in the meeting.

DR. F. T. MILES, of Baltimore.—In a case like this it is well to get all the information we can, so I will briefly outline the history of a case of malignant disease of the pelvis. A member of Congress fell twice in the streets of Washington, striking upon the same hip, and received contusions which were followed by intense pain. After suffering from severe pain for some time, the case was called one of sciatica, and he was brought to Baltimore to see me. I then looked for symptoms of neuritis, but there was no wasting of the muscles or weakening, and the response to the faradic current was very good—there was no reaction of degeneration. There was nothing abnormal about the pelvis that could be detected, and I examined him not only externally but per rectum, for I think that such intense pain would naturally suggest the possibility, at least, of the presence of a malignant growth upon the nerve which gives rise to the severe pain. Nothing whatever could be detected. As the patient had, in addition to his severe pain, and superinduced by it, a love for morphine, the question was as to how far his statements could be taken as actually true concerning his sufferings. As there was no evidence, either by pressure or otherwise, that there was neuritis, I reached the conclusion that it was a case of malignant growth or the expression of pain which did not exist, but made for the purpose of securing the usual quantity of morphine. I inclined to the opinion, however, that it was a case of malignant disease, as it had none of the usual symptoms of neuritis. The point of interest is that in general neuritic trouble we find with loss of power atrophy of the muscles, and in the second case there was but little atrophy although the nerve was involved. My patient went home, and died afterwards with the development of a malignant tumor about the hip. A competent surgeon living in his locality sent me word

that there was obviously a growth of malignant disease involving the hip. The sole symptom when I saw him was the intense pain, for the relief of which morphine was required.

DR. PUTNAM.—Was there any evidence of cachexia in the case?

DR. MILES.—Cachexia was absent.

DR. MILLS.—In one of my cases it was present, and in the other two it was absent.

DR. JAMES HENDRIE LLOYD, of Philadelphia, read a paper

"ON A CASE OF INSANITY OF DOUBT"[1]

REMARKS ON DR. LLOYD'S PAPER.

The President, DR. L. C. GRAY, of Brooklyn.—With regard to this case, I have no doubt as to its being one of insanity, and I should not have the slightest hesitation to commit such a person to a lunatic asylum. But I would not do it unless I knew something about the case. They are extremely dangerous, in my experience, because a number of these patients will go for a long time and present no tangible symptoms which will warrant condemning them, and some morning they will do some horrible deed which shows that they have been all this time just on the ragged edge of insanity. I recollect one case particularly, that of a woman who was brought to me who had been in this condition for several years. At one time she washed her hands four hundred times in one day by actual count and yet was sane, but nevertheless, after she had been run down in general health and had suffered from neuralgias which were somewhat benefited by treatment as was also her mental condition, I made up my mind that the best thing to do was to send her to Bloomingdale Asylum. I explained to her that she was to go there and why she was to go there and in all this she agreed with me. But the day before she went she got into a dispute with her mother about some little thing, lost her temper, and as soon as her mother left the room she took a piece of a match from under one of her finger nails, got a piece of paper, lit the match, set fire to the paper and then to her clothing, and burnt herself in a most terrible manner, thus showing that she had been secreting under her finger nail the end of a match and a bit of paper ready for any moment she might have opportunity to use them. That illustrates the danger in these

[1] See p. 590 of this volume.

cases, so that in any case where there was the slightest doubt of the ability of the friends to take charge of them, the danger of their being left at home would make me unhesitatingly commit them to an asylum, and take the risk which we all have to take in the management of insane cases.

DR. LLOYD.—I do not wish to be misunderstood as to my position regarding these patients. They are pre-eminently proper cases for restraint, such as an asylum affords if you can get them there. This woman refused to go, and could not be removed from the hotel without great resistance and being carried through the most populous part of Philadelphia. They came to our city and stopped at the Continental Hotel, and it was there that the husband told her what he was going to do with her. If by any management we could have gotten her to the asylum without raising a tumult I should have had her removed. But she was present and recognized her own condition, had perfect control of herself, and would have demonstrated to a lunacy commission that she was irregularly detained. I think that we have a right to regard the policy as well as the absolutely scientific requirements in some of these cases. The so-called intermediate treatment would probably have been best for this patient. That is, there are certain forms of house retreats where patients can be taken without being declared lunatics under the law.

The PRESIDENT then read a paper on

"CHOREA"

in which he maintained that it is not the trivial disease it is generally supposed to be.

REMARKS ON DR. GRAY'S PAPER.

DR. M. ALLEN STARR, of New York.—I would like to ask Dr. Gray if he has any facts which bear on the statement made by Charcot with regard to the danger of adult patients suffering from chorea going into a condition of insanity, especially melancholia. I have had under my care four cases of chorea in adults over the age of thirty years, and in one of these cases there seems to be a marked tendency to melancholia. According to the statement made by Charcot, that seems to be the tendency in a large number of cases of chorea occurring in adults.

DR. JAMES HENDRIE LLOYD, of Philadelphia.—I had a severe

case of chorea occurring in a pregnant woman a few years ago, so severe that it was impossible for her to lie in bed, and there was a decided degree of mental impairment, which I described as mild imbecility—she was so foolish and silly. There was a suspicion of syphilis in the case, and her general condition was poor. She improved decidedly under the influence of the *four chlorides*, of arsenic, iron, bichloride of mercury, and hydrochloric acid. She eventually got vastly better, but did not make a complete recovery.

DR. F. X. DERCUM, of Philadelphia.—I would like to ask Dr. Gray what his experience has been in the use of cimicifuga. In the University Hospital we are in the habit of giving our choreic patients arsenical preparations or combinations of arsenic and iron, but occasionally we meet with an intractable case, when we fall back on cimicifuga, and not infrequently with good results. It has appeared to me that the cimicifuga was the most efficacious in girls about the age of puberty.

I would also ask Dr. Gray whether he has had cases of chorea associated with epilepsy. A case was brought to me of a child suffering from epilepsy which was brought rather rapidly under control with bromides, but after a time general and marked chorea developed. Whether this was due to the depressing effect of the bromides or to other causes I am unable to say.

DR. GEORGE W. JACOBY, of New York.—I have under treatment a woman 38 or 40 years of age who is affected by stuporous insanity, the primary curable dementia of the Germans, and she has been affected in this manner eight weeks. Preceding the mental symptoms, she had an attack of chorea develop in consequence of sudden fright, and she has at present choreic symptoms in addition to the symptoms purely of stuporous insanity.

I was struck by one remark made by Dr. Gray when speaking of treatment, and that was with regard to rest. Almost all writers on chorea seem to advocate different kinds of treatment, and some in distinct contradistinction to what Dr. Gray has advanced. For example, French writers advocate massage and active movements, and endeavor to teach patients to co-ordinate. I have not had any personal experience in this direction, but it struck me as being rather interesting that two directly opposed plans of treatment are equally recommended.

DR. F. T. MILES, of Baltimore.—I will add a case of insanity and chorea combined in a puerperal woman. She was dangerously

insane, and once tried to throw herself out of the window, and once tried to swallow some medicine which she supposed was laudanum. She died without material improvement in her condition.

With regard to rest, one of the worst cases I ever had was that of a boy sent from a public school when the physician had tried the treatment by faradism thoroughly every day, besides walking the patient up and down between two attendants. Under this treatment the boy got a great deal worse. My own opinion about rest is that it is an important remedy. It is not only rest of body, but rest of mind, and that even the introduction of playmates to give a pleasurable excitement is bad.

DR. GRAEME M. HAMMOND, of New York.—With regard to the relation between insanity and chorea, there may be a distinction as to whether the chorea follows the insanity or the insanity follows the chorea. Charcot's cases were those in which insanity followed chorea.

I referred yesterday to a typical case of what Charcot has described as hereditary locomotor ataxia, the disease being present in the mother, in a brother, sister, and himself, and in a brother's child. It did not appear in any of the cases until the patients were adults, and my patient was forty-seven years of age and had had the disease one year. He told me that other members of the family had had chorea and died insane, and while I had this man under observation he became insane and remained in that condition, and when I saw him last he showed evidence of violent insanity.

With regard to the treatment of chorea, it is a disputed point as to the beneficial effect produced by arsenic. Some use no other remedy; some never use it. I use it almost exclusively, and it would seem to be a remarkable coincidence that the large number of cases treated with arsenic should happen to get well while the arsenic is being administered. Rest is also efficacious. I also use iron and cod-liver oil, and these with arsenic and rest constitute a more efficacious plan of treatment than any I have ever tried.

DR. WHARTON SINKLER, of Philadelphia.—I think that in almost all cases of chorea there is more or less mental impairment. The patients are irritable, they are easily annoyed, and frequently girls are hysterical. Some cases will get well with or without treatment. But in the cases which have continued for several

months, the ability of self-cure has passed, and if they improve under any particular drug we should feel satisfied that that drug has benefited them. In dispensary patients, the opportunity is not afforded of giving attention to rest and hygiene, which are of benefit, but we have to depend almost entirely upon drugs. The drug which has been more constantly beneficial than any other with me is arsenic, and I have given it in large doses sufficient to produce its toxic effects, but have not seen any permanent ill effects in any of the large number of cases I have treated.

We have to bear in mind the fact that there must be organic changes in different parts of the system, and Dr. Osler has been making some very interesting observations, about to be published, with regard to the condition of the heart in chorea. He has examined a large number of patients at the infirmary for nervous diseases, who have remained free from chorea for several years, and has found in a large proportion some organic disease of the heart as a sequel. From these observations the cardiac murmur so frequently met with in chorea should not be regarded as simply a functional or hæmic murmur.

DR. R. T. EDES, of Washington.—I can recall two cases of severe chorea, in one of which the patient died; another case in which the patient passed into a condition of stupor that lasted for several weeks with final recovery; and finally another patient who, I think, would have died without treatment. In this case, the treatment was largely chloral to produce sleep, and conium to control the violent movements, and I think that these drugs had a great deal to do with the patient's recovery.

DR. GRAY.—With regard to Dr. Starr's question as to the association of chorea and insanity in adults, according to my observation choreic insanity is a rare condition. It is a form of insanity which I think many alienists have not seen much of. The cases of choreic insanity which I have seen have been in adults and the chorea has been simultaneous with the outbreak of the insanity. The cases which I have seen have also been the peculiarly chronic stupid passive forms of insanity that are usually harmless, which last for many years, until the family and the physician have given up all hope when the patient gradually recovers. As to whether an adult having chorea for the first time is more predisposed to insanity, I am unable to say. There is a strong distinction, however, between true choreic insanity and the apparent imbecility of the choreic patient. The brightest of choreic

patients may look like insane persons; but, as a rule, I do not think that they are impaired in their mentality. That form of something that looks like imbecility, which is impressed upon the choreic patient, is entirely different from choreic insanity in which the muscular movements are very slight and fibrillary, and very apt to be overlooked. Then, too, there is a difference to be noticed with regard to races. The grave forms of hystero-epilepsy described by Charcot have not been seen in this country, and it is possible that there may be a difference between our American people and the pure Latin race which makes up the French people.

That cimicifuga is one of the tonics which has a beneficial effect in chorea I have no doubt, but I have not been able to say more than that concerning it.

The association of chorea and epilepsy has often been described.

As to the question raised by Dr. Jacoby and the plan of treatment recommended by Germain Sée, I think he should raise the question, Why does Dr. Sée differ with me? There is no question, however, in my own mind as to the efficacy of rest. I have seen it over and over again. I am so fully convinced of its efficacy that I will not consent to take charge of patients unless they will agree to submit to the rest treatment. But you may do what you choose, these children will toss about their beds, get out of bed and run around the room as soon as the back of the attendant is turned, etc.; so it is only moderate rest that you get, and nothing like the rest secured in an adult patient. But as to the gymnastics and muscular exercise, I have tried them and the results have been so indubitably deleterious that I believed I had no right to jeopardize the safety of the patient by persisting in them.

Thursday, Second day, Afternoon Session.

The Association was called to order by the President.

Dr. Francis X. Dercum, of Philadelphia, read a paper entitled

TWO CASES OF HEMICHOREA ASSOCIATED WITH BRIGHT'S DISEASE.[1]

REMARKS ON DR. DERCUM'S PAPER.

Dr. R. T. Edes, of Washington.—I should agree with Dr. Dercum inasmuch as I should not be inclined to regard the association of these symptoms with Bright's disease as altogether acci-

[1] See Journal of Nervous and Mental Disease, vol. xii., p. 473.

dental, but I should not explain them as he does, that is, as a kind of uræmic symptom, and in my belief, it is a mistake, frequently made, to ascribe so many of these nervous phenomena to uræmia. They have nothing to do with the accumulation of whatever it may be that gives rise to what is known as uræmia. It seems to me that these cases, and so with a great many cases of so-called chronic uræmia, are caused by a general disease and not by inflammation of the kidneys ; that the entire arterial system is involved. In both of these cases there was distinct weakness on the side of the chorea, and I should think there was a lesion in the brain, or some kind of temporary interruption of circulation. We know that there are cases of hemiplegia which come and go rapidly, and in which we would not find anything obvious to the naked eye, should we have opportunity to examine the brain. In general paralysis, there is a hemiplegia which is spoken of as due to congestive attacks, but whether congestive or not, they probably have something to do with disturbances of the circulation. I should be inclined to explain Dr. Dercum's cases in this way ; that these are cases of hemichorea occurring in Bright's disease, as we frequently have in Bright's disease hemiplegia due to to the general arterial disease upon which the disease of the kidneys depends ; that is, we have chorea instead of hemiplegia.

Dr. C. K. Mills, of Philadelphia.—I am strongly inclined to agree with Dr. Edes with reference to these cases, and not to agree with Dr. Dercum's view, namely, that in some way not clearly understood, Bright's disease acts so as to produce a unilateral impression upon the general nervous system and thus lead to these abnormal manifestations. At the Philadelphia hospital, I have seen many cases of Bright's disease and uræmia, and not a few cases of hemiplegia with Bright's disease, and in some of these have had opportunity to make autopsies. The explanation, it seems to me, is most likely a mechanical one, springing out of the conditions which are present within the cranium, in cases of uræmic apoplexy. These uræmic cases are cases of more or less general cerebral œdema. What is the result when there is general cerebral œdema? Certainly you have, in many cases, the œdema causing effusion into the inner cerebral membranes. It is common at post-mortem examinations to have this patent evidence of œdema in this peculiar appearance, disappearing as the effused fluid leaks from its peculiar positions. It seems to me that it is impossible, almost impossible to have such an œdema

without certain local effects. We have hemiplegia produced in the way which Dr. Edes has indicated; that is, in some parts of the brain there are mechanical effects produced by more marked effusion. The pia mater itself is practically a mesh of blood-vessels of considerable magnitude, and minute arterial hemorrhages occur which are easily overlooked; and there may be greater pressure from œdema at one part than another. In other words, there is absolutely an affection of the circulation or an interference with it in some way. Why it selects the left or the right side of the cerebrum is of no account here. Hemichorea, it seems to me, can be produced in this manner.

DR. DERCUM.—Although the view expressed by Dr. Edes is plausible, the fact that I discovered neither gross nor microscopical lesions, and the fact also that the French observers have not found lesions beyond œdema, makes me hesitate with regard to ascribing the symptoms to lesions where none is apparently present. Minute hemorrhages could not have escaped notice in my examination. Raymond's experiments on dogs certainly show a general impression that acted upon the nervous system the two halves of which have unequal powers of resistance. It is probable that, in one of the cases which I have reported, the patient may have, by this time, chorea on the opposite side. The œdema was equally well marked throughout the brain I examined.

DR. MILLS.—I would like to ask Dr. Dercum if he has noticed whether or not convulsions or paresis are more likely to occur upon one side than the other.

DR. DERCUM.—In my cases, one was affected upon the right side and the other upon the left. I believe that there was no special difference noticed with regard to sides by the French observers.

DR. E. C. SPITZKA, of New York, read a paper on

ACUTE OR GRAVE DELIRIUM.

It is unnecessary for me to define before this Association what is meant by acute or grave delirium: a condition which, while it shares many of the features of delirium due to febrile toxic agencies, is yet known to be of independent origin.

To some extent its peculiarly fatal character, and the essentially cerebral location of the lesion to which it is due, was recognized by Abercrombie, and particularly by

Thomas Mills who wrote in 1816. Speaking of a patient who, in consequence of domestic affliction and disappointment, developed a so-called brain fever, dying on the twenty-first day of the same, he says: "By some the disease would be denominated typhus, by others, from the appearance of petechiæ and the violence of the symptoms, the spotted, putrid or malignant fever." On dissection, no evidence of putrescent fever was found in the body; the thoracic and abdominal viscera were sound; but the brain exhibited "marks of excitement and inflammatory action. . . . The pia mater was highly vascular, and there was, moreover, on the surface of the brain a considerable degree of venous turgescence." One of the first to recognize it as a form of insanity distinct from mania was Luther Bell, of the Massachusetts Asylum, who termed it typhomania. Since his time it has been repeatedly described. The French and German alienists of the last decade were inclined to regard it as a clinical entity. Fürstner, Mendel, and Jolly consider it merely as a symptom which may be due to different pathological states. There is no question that some cases of acute fatal hysteria approach it so closely as to be clinically undistinguishable from it; while on the other hand, it may be a complicating culmination of ordinary insanity. It may also be an evidence of ulcerative endocarditis, of microparasitic invasion of the brain (as in one of my cases), and finally it may be entirely and exclusively the result of mental worry, domestic affliction, nay, of fear and expectant attention. There is no doubt in my mind, and Dulles verbally expressed the same opinion to me, that some of the cases classed as "hydrophobia" and rabies were cases of acute delirium, due either to the latter cause alone, or tinctured with the prevailing newspaper epidemic.

As I have recently read a paper dealing with the etiological and clinical features of this disease elsewhere,[1] I will content myself with giving a rapid sketch of the progress of typical cases.

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[1] American Medical Association, June, 1887, at Chicago.

Ordinarily the disease begins with insomnia, malaise, and inability to think, accompanied by a bursting sense of pressure in the head. Increasing irritability and a sense of impending misfortune precede the outbreak, which latter is often so sudden as to suggest the fulminating type of typhus or of epidemic meningitis. In such cases, the patient, arising from a confused sleep, staggers round as if drunk; or having lain down oppressed by some real grief or subjective melancholy, he or she rises hilarious, dances round, vociferates, indulges in erotic or expansive imagery, to pass into apathy either with or without the intervention of a lucid remission. Soon the flight of ideas increases: in some, a wild aggressive delirium, marked by celestial, diabolical, or flaming visions, auditory hallucinations of voices, of thunder, and illusions of touch, such as that the skin is covered with vermin, preponderates. In others, there is a distressing anxiety from the onset, which, as it deepens, becomes a panphobic delirium; police officers, murderers, toads, goats, negroes, fleshless skeleton hands crowd round the patient, and shrieking, he or she jumps out of the window, beats the plaster from the wall and eats the bedding, and clutches the attendants with the frenzy of despair. The more violent class may sing, whistle, yell, and tear off their clothing continuously for days. Those who early suffer from impaired consciousness exhibit a suffused, stupid face, and lie almost motionless, groaning, or puffing and blowing with their mouths in a peculiar manner. Imperative movements, particularly of the variety known as *manus ad genitalia* in meningitis, but of far greater intensity, are next developed. In some patients, they take the form of salaam movements. In others, the head is kept plunging away at the ceiling till it is beaten to jelly. One case observed by me in a pauper asylum, rubbed his thumb knuckle against his teeth till the member hung by a thread of skin. In another group, an enormous reflex excitability is developed, and to some extent, and at same time, this is observed in all cases. The slightest touch suffices to produce an extreme flexion contracture in some, and as intense an opisthoto-

nus in other cases. In most, this reflex excitability extends to the pharynx, constituting an insuperable obstacle to forced alimentation. The few cases that have recovered with life, were such in which nutrition could be kept up, and in the history of the only case I am acquainted with where a complete cure was effected (one reported in Dr. Mills' service at the Pennsylvania Hospital by Dr. Harriet Brooke), special attention is directed to the readiness with which the patient took food as an explanation of the recovery, and as an exceptional feature.

The hurricane overwhelming the mental functions in grave delirium does not leave the somatic functions untouched. The temperature rises to from 102° to 105°, an acceleration of the pulse up to 140 beats accompanies this rise, and its character is thready, compressible, and it is sometimes irregularly intermittent. Peculiar trophic lesions, pemphigus, bullæ, pustules, and bed-sores complicate the picture, and during the last days or week of life a marked cyanosis is noted. The suggillations, occurring as a result of the injuries self-inflicted in the course of the patient's incessant rolling about, exhibit a resemblance to the hypostatic patches of the dead rather than the bruises on a living body. Everything indicates a profound exhaustion of the somatic forces, and death finally ends the history, either suddenly in the midst of the patient's screams, in collapse during stupor, or finally with every indication of oblongata paralysis during a lucid interval.

These lucid or paralucid intervals are the most remarkable features of the disease. They are noted in the initial period, during the development and progress of the delirium, and even at its end. No more pathetic picture can be conceived than the return to lucidity, just before death, of the mother of a family conscious that she is about to die, taking leave of her children, and distributing presents to the servants to atone for her delirious violence to them. This particularly when, as in one of my cases, the disease was entirely due to emotional causes, namely, the sudden death of the husband. Less perfect remissions are common during the very height of the disorder. The patient

awakes from a doze, recognizes that he is in a hospital or in an asylum, admits that his head is confused, or that he has been or is deranged, and, intermingled with these admissions, rambles about dogs, soldiers, snakes, and other objects. The inexperienced have on more than one occasion been induced to suspect simulation from this apparent inconsistency.

The findings in the brain vary greatly; from negative ones to such involving the most profound structural changes. I exclude from consideration those exceptional cases where microparasitic invasion, multiple cysticerci, and ulcerative endocarditis were found. These cases seem to illustrate the fact that any multiple irritative lesion, suddenly overwhelming the brain functions, can produce delirium and coma.

In that group of cases due to emotional causes, alcoholic excesses, insolation, and the development of pre-existing insanity into this form, it may be broadly stated that in those terminating fatally before the seventh day, gross lesions of the brain are not found. In those dying on the tenth to fourteenth day, the cortex is found reddened, the white substance may appear discolored,[1] the leptomeninges appear dull and thick, milky streaks are found along the lines of the vessels,[2] sometimes the pia is slightly œdematous, and under these circumstances the cortex, instead of presenting the rosy tint of injection, may be pale gray or yellowish. In cases of dying after this time, remarkable conditions are found. As far as I can learn, the first mention of these was by myself, in a brief communication to the New York Neurological Society in 1878.[3] I found in a case where all the changes thus far mentioned were most marked, the cortex actually appearing mottled with purple, blue, and crimson patches, that a gelatinous material lay in the meshes of the pia, around several of the vessels. I secured some of this from near the floor of a sulcus, but was unable to discover

[1] Schüle, "Handbuch."

[2] Krafft-Ebing, "Lehrbuch."

[3] JOURNAL of NERVOUS and MENTAL DISEASE, 1879.

any traces of organization in it. It was of a pale buff tinge. Throughout the cortex I discovered a number of small perivascular patches, which retained this color even after the scalpel had expressed the blood. They seemed to adhere to the adventitia. Microscopic examination showed that this material constituted a veritable exudation. It was uniformly found around blood-vessels, stuffed to repletion with blood corpuscles, in stasis. To my mind it resembled fibrin in the hyaline state, being homogeneous or finely punctate. Its contour was in most places distinct, in others, a peculiar condition of the neuroglia was found on the perivascular border. This latter in its basement substance stained with a beautiful pink flush, which gradually lost itself in the contiguous tissue. It was as if the neuroglia had imbibed the material exuded, and this being of a protoplasmic character, had given it a higher stain in carmine. In some instances the exudation was enormous, equalling in diameter, on either side of a larger arteriole, from one-half to two-thirds the thickness of the latter. It was particularly massive near the bifurcation, or ramification of the vessels, at the borders of the white and gray substance, and in one single section, fibrin in layers was found firmly united to the neuroglia on the one hand and connected with the hyaline material on the other in three places. There were no pronounced changes in the nerve elements themselves. The nuclei of the neuroglia were about twice as numerous as usual, and collected around the smaller capillaries. The pyramid cells stained poorly, but their processes were well preserved as far as could be seen.

In his lectures on mental diseases, Clouston,[1] failing however to recognize the clinical character of his case, describes small, pellet-like bodies, the size of pin heads and of a glistening appearance, distributed throughout nearly the entire cortex of the brain. His plates[2] show a condition very much like that found in my case. He describes them as found in single spots, or immense lobulated

[1] Lectures, page 194.

[2] Plate III., page 193, and Plate VIII., page 426.

masses, with a nucleus in the centre of each, quite visible to the naked eye. Probably what he means by "nucleus" is the blood-vessel which runs in the axis of these masses. He compares it to waxy material, and speaks of it as a chemical product deposited around "nuclei." As I have found brains of sufferers from delirium grave peculiarly liable to that dissociation in alcohol which leads to the precipitation of leucin spheres, it is just possible that Clouston has incorporated with his correct observation of the masses found in the recent brain, that of artificial bodies produced in hardening, an error of which Fürstner[1] accuses Yehn with some justice.

More recently Fütterer[2] discovered a large number of yellowish foci, fifteen of them being macroscopic, all located in the subcortical white matter, and which he interprets as the nutritive results of thrombic stasis.

All these changes are, in my opinion, collateral results of the hyperæmia which is the characteristic of the disturbed brain circulation, and throw no direct light on the essential pathological foundation of grave delirium. That morbid changes from thrombic stasis are apt to be most marked in the subcortical white matter, I pointed out in 1877 in explanation of the peculiar disturbance of mental association found in paretic dementia.[3] To explain the phenomena of the former disease, in accordance with established etiological facts, we must assume that in some cases there is a slow, in others a rapid formation of a toxic agent in the nerve centres themselves, a self-intoxication, so to speak. We know that mental states influence the secretions and excretions, both quantitatively and qualitatively. The icterus of sudden rage, jealousy, and fear is no fable. The venomous character of the bites of infuriated human beings and animals are attested by well-observed instances,

[1] Archiv für Psychiatrie, xi., foot-note p. 528. Remarkably enough the error of which Fürstner accuses Yehn, was repeated by a pupil of Fürstner's in a monograph prepared under Fürstner's supervision, based on specimens prepared in his laboratory.

[2] Virchow's Archiv, 1886, cvi., p. 579.

[3] "Psychological Pathology of Progressive Paresis," JOURNAL OF NERVOUS AND MENTAL DISEASE, July, 1877.

and recently I have obtained a ptomaine of intense virulence from the saliva of a dog, dying two months after artificially induced brain disease, in convulsions.

There are features observed in the morbid anatomy of grave delirium which point in this direction. So strongly do they point in this direction that Briand-Marcel examined the blood of seven cases for bacilli, and claims to have found them in three. Fürstner made the interesting discovery, which I have confirmed in one case, that the blood removed from the finger during life is surprisingly dark, and, contrary to what is the rule with dark blood, coagulates rapidly and *en masse*. In addition, the muscles are of a dark brown color, dry, amyloid degeneration is common and most marked on the right side. This change in the muscles is identical with what Zenker, Bowman, Waldeyer, and Wedl found in typhus, variola, pneumonia, puerperal fever, epidemic meningitis, traumatic and inflammatory changes resulting from injury to the muscles, and in tetanus. Either the diminished nutrition or the prolonged muscular strain is the cause of acute delirium. Perhaps both co-operate. Certainly, from the preponderance of this amyloid degeneration on the right side, in two cases observed by him, Fürstner is justified in regarding the latter as playing some part.[2]

This theory, the production of an autochthonous nerve poison, is the only one which accords with the following facts:

1st. That an hereditary or acquired disposition to insanity and other nervous disorders, involving undue biochemical mobility of the nerve centres, exists in over ninety per cent of the cases recorded.

2d. That insolation, alcoholism, and emotional overstrain are the usual exciting causes.

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[1] Archives de Neurologie. 1883. Rezzonico (Archivio italiano per le mallatie nervosi, xxi., 5) found micrococci emboli in one case; I found perivascular nodules and subpial invasion zones, whose periphery was crowded with microorganisms, whose exact nature the imperfect preservation of the specimens prevented my ascertaining. Briand-Marcel's culture attempts failed.

[2] Archiv für Psychiatrie, xi., p. 530.

3d. That changes in the blood and other tissues, analogous to those found in zymotic diseases, occur.

The lucidity exhibited *sub finem* in some instances, and in the course of the disease at others, is one of the most difficult facts to explain; but it is not without its analogies. Many of the deaths from strychnine poisoning and tetanus recorded occurred, not in convulsions indicating the intense action of the toxic agency, but in a quiescent state, from oblongata paralyses, or other sudden asthenia.

The crucial test, as to the existence of such an agent in the circulation, I made on three rabbits. This was prior to the time when I recognized what a miserable test of the virulence of ptomaines or bacteria this animal is.[1] All the animals died within forty-eight hours, in convulsive stupor, with cries of distress in two instances, in paralytic coma in the third. For the reasons indicated, I attach no importance to these results. I am inclined to attribute more weight to a therapeutical observation, which first directed my suspicions to the existence of some chemical agency baffling treatment. I have given morphine in every legitimate dosage, and even passed what many would regard as the limits. In no instance have the pupils, the pulse, the secretions, the subjective sensations, or the mental state been affected in any way by this ordinarily so powerful and constant alkaloid. I trust that those who are better chemists than I am, and have a larger material at their disposal, will direct some attention to the very important question of the ability of the predisposed and over-burdened nervous centres to poison themselves.

REMARKS ON DR. SPITZKA'S PAPER.

The President, DR. GRAY, of Brooklyn.—I understood Dr. Spitzka to say that all the cases were fatal. I have seen two cases of this kind, in everything like those by Dr. Spitzka except the fact that they were not fatal. They had all the phenomena on

[1] They were terebrated. Fritsch has recently, in the course of his control experiments on lyssa, had a similar experience.

which one would base the diagnosis of grave delirium. In one case, the patient went to a lunatic asylum where the diagnosis of general paralysis was made. One patient lived six months or more, and died of intercurrent disease. In one case, there was a syphilitic history, very distinct, of the year previous, but no distinct connection between it and the outbreak of mental symptoms was made out. It seems to me that there are forms, therefore, of what clinically we would diagnosticate as acute or grave delirium, which are capable of passing into the subacute or chronic condition, and, therefore, it is difficult to make the diagnosis. These two cases had these distinct characteristics, which I would ask Dr. Spitzka if he has seen. While they were violent, and the hallucinations were cyclonic in character, they were easily controlled without mechanical restraint. I recollect one case which I put in charge of a trained nurse, and at my next visit I found that the nurse had become demoralized, and had called in a man to assist her, and yet I could stand at the foot of the bed of the patient and get him to lie down or do what I wished. Other cases of grave delirium have not had that characteristic, and there has been no means of preventing them from injuring themselves except by restraint.

DR. C. K. MILLS, of Philadelphia.—I recall the case which Dr. Spitzka mentions in his paper. This patient recovered after a long time. The treatment varied from time to time, consisting chiefly of packs, hyoscyamine, bromides, chloral, administration of food.

I remember three cases, in which I was called in consultation in private practice; three women. All three had been diagnosed as cases of hysterical insanity. Two of these three patients died, and one recovered. I believe that two of them were fairly cases of typho-mania or grave delirium. I mention these cases because of the practical point of mistake in diagnosis, and I speak of fairly calling them grave delirium, because I appreciate the difficulty of drawing the line between typho-mania and acute mania, and perhaps several other affections. I think it is likely that most of the cases of recovery may not have been entitled to the designation.

I noticed, within a week or two, in one of the journals a rather interesting observation, in which a physician in the West very promptly relieved a patient by administering a large dose of morphine and following it with chloroform.

With reference to the more scientific point in Dr. Spitzka's

paper, that of self-poisoning in these cases, although it is interesting, it is one which does not admit of discussion at this time.

DR. SPITZKA.—I cited Dr. Mills' case because there was no question in my mind that it was one of grave delirium, although the recovery was exceptional on account of the readiness with which nourishment could be administered.

With regard to the case treated with morphine and chloroform, I should have serious doubts unless it had been carefully analyzed. These cases do not cease suddenly, and I doubt if it would be proper to administer chloroform.

I must congratulate Dr. Gray on his experience in having seen two cases recover, which is exceptional indeed. He says that some of these patients are quite reasonable with the physician, and I think that in censuring the attendants he is apt to overlook one point, and that is, the patients will show less respect to those continuously around them than to those who come in occasionally. In theory I am opposed to mechanical restraint, but I should find it difficult to get along without it in these cases. Chemical restraint fails in these cases, and that form which would be efficacious would be unjustifiable. The principle of trying to get along without restraint is correct, of course.

I would say with regard to the self-intoxication theory that it is merely suggestive, and we must know when and what to look for. I exclude all acute maniacal cases, and limit myself to those cases where emotional disturbances, alcoholism, and sunstroke are the exciting causes of insanity.

DR. HENRY HUN, of Albany, read a paper entitled,

"GLIOMATOUS HYPERTROPHY OF THE PONS."

Gliomata of the pons are very rare, only a few cases being on record. The following case, occurring in a girl six years of age, showed steadily increasing inco-ordination of movements, bulbar paralysis, and general motor paresis. The father died with symptoms of melancholia and dementia. Two months ago, the patient had an attack of croup followed by a cough. Every time she coughed she felt a severe pain in the top of her head, but at no other time. About three weeks ago she began to walk badly. Her mind is clear, memory good, and she is not nervous. She has an excessive appetite. She is a well-nourished, in-

telligent girl, but has a vacant expression. Her speech is drawling. She keeps her mouth open most of the time, drools when eating, and has some difficulty in swallowing. Her head is drawn towards the right shoulder most of the time, especially when she makes any exertion. She stands with her feet wide apart and is careful not to lose her balance. In walking, she tends to walk in a circle, always turning towards the right. The gait is unsteady, swaying and pitching. There is no disturbance of sensibility in any part of the face, body, or extremities. The plantar reflexes are normal; no ankle-klonus; knee-jerk exaggerated, especially on the right side. Well-marked optic neuritis in both eyes. Urine contains neither sugar nor albumin. Later, there was ankle-klonus, strabismus, and slow panting respiration. Hearing and cutaneous sensibility remained unaffected; sight but slightly impaired. No convulsions. Death occurred suddenly with consciousness to the last.

Autopsy.—The bones of the skull were thin. The pons Varolii was greatly enlarged, to three or four times the normal size. On section, it was found to be replaced entirely by a tumor which preserved wonderfully the normal appearance, so that it looked like a greatly hypertrophied pons. A little posterior to the middle of the pons on the right side was a spot of softening, about three-fourths of an inch in diameter. The tumor seemed to be confined pretty accurately to the pons, the crura cerebri and medulla being but slightly enlarged.

Microscopical examination revealed the growth to be gliosarcoma. The tumor produced no symptoms of irritation; there were no convulsions and but little headache. There was simply a steadily increasing loss of function of those nervous elements which are subjected to the pressure of a growing tumor. It was remarkable that, notwithstanding the great amount of œdema of the brain present in this case, and an internal hydrocephalus so extensive as to cause a perceptible enlargement of the head, consciousness, even intelligence, was preserved up to the end of life.

REMARKS ON DR. HUN'S PAPER.

DR. M. ALLEN STARR, of New York.—I would like to ask Dr. Hun as to the condition of the lemniscus. In the record, he speaks of the symptoms of inco-ordination with ataxia, and I think it is well proven that that symptom is produced in lesions of the pons by involvement of the lemniscus. I would also inquire whether there was ascending or descending degeneration of the lemniscus.

DR. HUN.—The entire pons is very uniformly infiltrated with these new-formed cells, and it is difficult to say that one point is involved more than another. The lemniscus does not seem to be more affected than any other part, and yet it may be.

DR. SPITZKA, of New York.—In gliomatous infiltration of the pons, the lesion might be described as total in some parts and partial in others, with the fibre tracts undisturbed or not, softening, etc., and I think that it would add greatly to the value of the record if that were supplied in the form of a chart. The location of the patch of softening I see is quite distinct.

DR. M. ALLEN STARR, of New York, then read a paper on

PARAMYOCLONUS MULTIPLEX, WITH THE REPORT OF A CASE.[1]

DR. E. C. SPITZKA, of New York.—Whether we are justified in drawing any sharp line of demarcation between this and other conditions is a matter of doubt in my mind. I will add a case of paramyoclonus multiplex observed in my consultation practice, which will bring the number up to eleven.

Adolf L., aged 30, born in Poland, and a saddler by occupation, while working for Brewster & Co., was attacked by a pulmonary affection. On going home he felt a sharp pain over the sternal region, fell down, and had a hemorrhage from his mouth accompanied by cough. Friends took him home and a physician who was called in pronounced the case one of "pneumonia, gastric catarrh, and trouble in the back." He suffered with the disorder thus designated about four weeks; fever subsided, but an intense acute pain was developed in the left pectoral region, for which Dr. Mandelbaum gave him two hypodermics of morphia with the patient's knowledge. He denies that the knowledge of this administration had any great effect on his mind. His own account is as follows: "The morphia was scarcely in five minutes before

[1] See JOURNAL OF MENTAL AND NERVOUS DISEASE, vol. xiv., p. 416.

my arms began to work, they shook violently as if they were steam-pistons crossing each other. This spasm continued four weeks in the right arm, and a year and a half in the left." As I saw this spasm myself in the second attack, I can describe it. The motion consisted of a rapid clonic spasm, the forearm being flexed on the arm, with the palms towards the chest, and in this position both upper extremities underwent a violent clonic sawing motion in the shoulder joint; the symmetry of the motion was remarkable, the intensity seemed to be greater in the left, where it was accompanied by beating of the hand against the right infraclavicular space; the right being crossed over the left, the forearm of the former beat against that of the latter, occasionally striking the left infraclavicular space. At that time he had spasms similar to those to be described, and as at present most marked in the right leg. He recovered after eighteen months, the left arm being the last site of movements of a morbid nature, and worked at his trade of a saddler for nearly six years without an unpleasant symptom. Eight months before my being consulted by Dr. Price, he had an attack of pleuropneumonia with pleuro effusion; at this time his left arm experienced a drawing sensation, and it was spoken of to Dr. Price's predecessor. The patient begged the physician to "do nothing for it," as he feared that no remedy would avail him, even if it did not make matters worse. The physician said: "I will show you that I can do something," and gave him a pill. The patient claims to have become worse, the sawing motion of the left arm recommenced, and the drawing sensation passed to the right. The medical attendant then attempted to render the arm immobile with a bandage. Although this happened five months ago, the arm still shows black and blue marks attributed to that appliance. The cough with which the patient was affected gave place to a peculiar outcry which occurred at the height of the spasm from one to six times, it was "nay," or "hay," or "hirr."

After the left arm the movements on this occasion involved the right leg, and at the commencement of the spasm only these parts experienced drawing sensation and spasm. But towards the acme of the spasm, the symmetrical movements were executed by the other side, the entire trunk became involved, the face markedly so, and the bed and the entire room shook with the violence of his movements. There were a number of points, contact with which evolved the spasms. The most sensitive was on the right knee.

I experienced the same difficulty in testing the knee-jerks mentioned in the other cases of Friedreich's symptom. Mental impressions provoked the spasms and my visit in the capacity of consulting physician provoked an unusually severe one. He called out "nay," and "hay," eight times in twenty-five minutes; the spasm, with occasional ups and downs, lasting that long. I estimated the movements at 140 a minute. I examined him on February 25th the first time and found the pupils equally and greatly dilated, reacting sluggishly to light and accommodation; three days later the left pupil was noted to be distinctly narrower. In the periods of rest, the tongue shows a fine tremor; during the spasm, it moves in and out at a rate synchronous with the movements of the left arm. There are no movements during sleep. It can be distinctly seen that the patient struggles against the movements, perhaps delaying, but ultimately overcome by them. Another person might succeed for a time in checking the incipient movement of the right leg, but if he did so the movements began in the left arm with great intensity and then rapidly involved the whole body, and on the first spasm observed, the left side of the face seemed to precede and exceed the right, but close observation of later attacks showed that both were symmetrically involved.

The cutaneous pressure sense is bad in some parts, particularly on the calf of the leg, pain sense is abolished, a needle having been repeatedly run through the skin of the calf of his leg without being felt. The temperature sense is perfect. He could not distinguish salt, sugar, or pepper five months ago. In a few weeks Dr. Price ascertained that these articles tasted like sand when the patient's eyes were closed, but when they were open, the patient claimed to recognize their flavor. When I tested him he could tell the various articles employed, with his eyes shut, and correctly located the part of the tongue to which they were applied. If he closed his eyes while standing, he would be thrown off his feet violently by trunk spasms.

On June 13th the patient who had been placed on the bromides in large doses, came to my office, a feat previously impossible. He could walk without assistance, and the movements were ordinarily limited to the left arm. As he undressed for examination, a peculiar movement developed in the lower extremities, like the clonic tremor which seizes a man's arm when attempting to hold out a dumb-bell after tiring of the muscles, these gradually raised him up as if stiffening like a strychninized animal, and, but for sup-

port he would have fallen over in this clonic symmetrical spasm of the trunk, thighs, and legs (?). A careful test of cutaneous sensation revealed no anomaly whatever. Sometimes there is subjective sense of heaviness in the limbs. The pupils were equal and reacted well. Ankle-clonus is easily elicited on the right side, but not on the left. When he closes his eyes the left arm makes a violent turn outward and backward in the shoulder-joint, so as to unbalance him. During the past four months he has improved whenever the bromides were pushed, and deteriorated when they were suspended. On the latter occasions, pain was felt in the back from the neck down, so that he could not lie on it. It was also noticed that a dry cough which recurred was worse when the bromides were suspended.

The patient is a zealous workman of prepossessing countenance, and there is on his part every effort and intention to get well. He always was an excitable man, "very tenacious of what he regarded as his rights, and intemperate in maintaining them." Of four children, one died in convulsions at the age of nineteen months, three years ago. The rest are healthy. Dr. ~~Pierce~~ Price states that morphine has a bad effect on his heart, and on repeating a trial at my suggestion, he found, and I found that it made the patient distinctly worse, although it was given disguised. I tried suggestion *à la* "myriachit" with no result whatever. Galvanism failed to exert any good effect.

From the character of the movements, their symmetry, the muscles mainly involved, and the absence of signs of organic disease, I believe that the case can be ranked only with the symptom-group described by Friedreich. At the same time, it is noteworthy that the movements were not symmetrical in their severity, and that there were other anomalies, notably the peculiar exclamation, which would seem to indicate that until more cases were observed it would be premature to insist upon a narrow demarcation.[1]

Dr. C. L. Dana, of New York.—The patient mentioned by Dr. Starr had one of his convulsive attacks in my office, and I had an opportunity to study it in comparison with a case of convulsive

[1] The history here furnished is inserted by permission, not having been fully stated at the meeting. Another case, Ernest S. W., the record of whom has since been found, had the typical condition in the trunk and lower extremities, elicitable on pressing the sacro-coccygeal articulation; the assigned cause in his case was a lumbar strain caused by moving a piano. The patient has been seen by other members of the association.

tremor which I had seen nine months before. My case occurred in a boy 17 years of age, and it seems to me that it was essentially the same kind of disease as has been described by Dr. Starr.

With regard to the nature of the disease, while I think it is desirable to draw sharp distinctions when we can, I do not see by what right any one can set up a certain group of symptoms and say that everything which does not show these symptoms has some other disease. Friedreich has not discovered its morbid anatomy or pathology. He cannot say that the symptom-complex is a thing by itself. My own opinion is that convulsive tremor is essentially identical with paramyoclonus multiplex. I think that Dr. Prichard's case goes to show this. I do not think that we can exclude a disease because the wrists are affected, when Friedreich describes a disease in which the muscles of the body and arms are involved.

DR. GEORGE W. JACOBY, of New York.—I believe also, with Dr. Dana, that we cannot draw the line sharply as Dr. Starr has done. I found in my notes the record of a case which I saw in 1884, and which I think will come into this category.

On September 10th, 1884, I saw Mr. W. S., 25 years of age, German, a machinist, and a resident of Hoboken, N. J. I made the diagnosis of "myoclonus spasmodica." My notes then were as follows: Family history unimportant. He had three brothers and two sisters, all well. The patient was well until eight months ago, when he had pain in the sole of the left foot and the pain was severe and momentary when any unequal pressure was made upon the sole, as in walking upon cobble-stones. He then had similar pains on the opposite side, which lasted for five months. He was otherwise well. About three months ago he noticed that when he would stand at work, his knees began to tremble; this was very slight and lasted only a short time. Then his eyes became affected. Everything he looked at seemed to dance before him, so that he thought his eyes were moving to and fro. He asked his friends if they could see anything within, but always received a negative answer. At this time, the tremor in his legs became more jerky, and he had difficulty in walking. Then his head also began to jerk forward and backward, never sideways. He has fallen in the street on account of these contractions in the neck and legs. He is always perfectly conscious. He never had this trembling when he ate or drank, only when standing or

walking; when sitting he was perfectly quiet. The patient is tall, robust looking, talks slowly, and seems to have difficulty in pronouncing words. When he sits still, nothing out of the way is noticed; but as soon as he gets up, his head is thrown forward and backward by clonic contractions of the muscles. These movements began at the rate of about five a minute, but gradually increased up to sixty when he is obliged to sit down, and they gradually cease. Both arms also show short quick movements of flexion and extension, the fingers being continually flexed. These movements are not synchronous with those of the head, and this is noticeable in the beginning when the movements are slow. The muscles of the neck, particularly the sterno-cleido-mastoidei and also the biceps and triceps, can be seen and felt to contract. All voluntary movements can be easily executed. Patellar tendon reflex enormously exaggerated. Slight lateral nystagmus. When standing, if he has the slightest hold upon anything, the movements decrease in intensity. Pressure upon the soles of the feet, when the patient is sitting, also produces the contractions.

While this case does not fall entirely within the description given us by Dr. Starr, yet I think it must be considered as one of the same or a very similar class.

DR. F. X. DERCUM, of Philadelphia.—I also agree with Dr. Spitzka, and Dr. Dana, and Dr. Jacoby, and cannot see any special reason why a fixed description should be adhered to. It seems to me that we must look upon the disease in a broader light, and that these convulsive phenomena have a common cause. Some of the gentlemen present may be aware that with Dr. A. J. Parker I performed some experiments and artificially produced convulsive movements, and we explained the phenomena on the ground of strain at the time and temporary nervous exhaustion. The movements were not limited to any one part of the body, but any part being placed under strain would be affected more violently than other parts.

DR. C. K. MILLS, of Philadelphia.—I must agree with the other gentlemen, although I hope Dr. Starr's equilibrium will not be disturbed. With reference to making this a permanent affection, this symptom-group, I do not see any good reason for separating it from convulsive tremor or from some affections which we call hysterical. It would be interesting if Dr. Starr would give us the differential points between this affection and certain hysterical motor seizures.

I have described two cases somewhat like those described this afternoon, although not so well described and in such detail. I have seen others which are sufficiently close to be placed with them. Only last week a patient died of pneumonia at the Philadelphia Hospital, and in many respects the case was much like those described this afternoon.

H. P., aged 24, colored, born in Pennsylvania, married, was admitted to the nervous wards of the Philadelphia Hospital, October 10th, 1886. She had had measles, whooping cough, and other diseases of childhood, but otherwise was healthy up to the age of 15, when menstruation began. The patient then commenced to have paroxysms of severe headache, usually coming on from four days to a week before the flow, and gradually disappearing as it subsided. She was married at 17 years of age, being about two months pregnant at the time. The child was carried to full term, but only lived three weeks. During pregnancy, her headaches continue increasing in frequency. She had three other children one year apart, the second of which was still-born. She said that the headache was at the vertex and below the eyes. She was always constipated before her admission to the hospital, sometimes going a week without a movement of the bowels.

Her nervousness dated from the birth of her still-born child, and began with pain and weakness in the lumbar region. At times her elbows and knees were very weak, sometimes suddenly giving way beneath her when she was holding anything. This weakness gradually became worse.

She began to have twitching of the arms, trunk, and legs, also of the neck and face muscles. When she remained quiet sometimes in the daytime the twitching ceased. At night, however, the most violent attacks of twitching occurred. Upon touching her slightly, but suddenly, violent spasmodic writhing took place. Any sudden noise had the same effect. She said that she neither felt pain nor fright, but the movement was entirely involuntary. She made a jerking convulsive movement in picking up or putting down anything, but once grasped she held it firmly. Reading caused spasmodic movements of the head and neck. She was a little near-sighted. She could feed herself, and after holding a spoon for a few moments she could carry it to her mouth without spilling. All her muscles twitched upon first touching anything, but upon prolonged touching or holding, the movements ceased. The knee-jerk was very much exaggerated for a few seconds, but

after repeated or continuous trials it was lost entirely. Upon tapping to bring out the knee-jerk, spasmodic movements of the back and thighs occurred. She had pain in the back at times, not marked, however.

This patient's movements were bilateral; they were symmetrical at the time of the occurrence of the movements; ordinarily the movements were confined to the legs and the trunk. If I attempted to have her stand they were much exaggerated, yet if she persisted in the attempt she could be made to walk quite well. With all this she had nothing of the condition of tonic spasm of the muscles, and there was no possibility of the case being one of spasmodic tabes, or any condition of that kind.

There is a patient who comes occasionally to my service at the Philadelphia Polyclinic whose record I will also give.

T. T., aged 4 years and 8 months, was sent to the Polyclinic for report as to electrical condition, and both upper and lower extremities responded to the faradic current and galvanic current. His mental powers were deficient. The child had a flat face, with a chronic eczematous eruption. He had a vacant expression and has no speech except to say papa and mamma. His limbs were thin. He was extremely restless and irritable. If he was touched suddenly, or if he heard a loud noise, he suddenly became convulsed without loss of consciousness. His head and body were tossed violently backward, his legs and arms being agitated in the same manner, being tossed in the air in a succession of rapid clonic regular movements. Although the description is very meagre, still it covers the ground.

DR. B. SACHS, of New York.—I would like to say a few words in support of Dr. Starr's position. The term paramyoclonus has only a clinical significance. It does not describe a distinct morbid entity. The fact that we have a large number of functional tremors does not prevent us from making a subdivision and giving it a distinct name. While every one of us will allow that it is fair to speak, of muscular dystrophies, a certain number of subdivisions may be accepted, even if they have a resemblance. There is occasion for distinct subdivisions, in the same way, in this class of cases. The agreement between all of them is very marked; whereas the distinction between these cases and convulsive tremor, and those of a hysterical functional type is very great. If we reason in that way we need not discard the term, and there is a sufficient number of cases to be entitled to that designation.

DR. WHARTON SINKLER, of Philadelphia.—I have seen a number of cases of hysterical convulsive tremor which closely correspond to the description given by Dr. Starr and others. One in particular I have seen recently, in which there was bilateral convulsive tremor in a girl who was distinctly hysterical. It seems to me that in the cases described by Dr. Starr the hysterical element is more or less present. They all tend towards recovery.

DR. STARR.—I think that the discussion has been profitable; in fact it has appeared that we have all seen cases which do not correspond to any other designation than that put at the head of this paper.

With regard to Dr. Spitzka's case. He says that the patient gave an expiratory sound, and spoke of that as not having been observed in other cases. I mentioned the fact that in my case there was clonic spasm of the diaphragm occurring in almost every attack and resulting in a long inspiration accompanied by a sound. I would also mention that the making of a sound has been recorded in another case. I would also call attention to the fact that, in Dr. Spitzka's case, the spasm was *bilateral* in particular sections of muscles, but involved one side more than the other. In paramyoclonus, the spasm is bilateral and not unilateral. If that is so, Dr. Althaus' three cases and Dr. Pritchard's cases must be ruled out. If they are convulsive tremor, they are not paramyoclonus.

With regard to Dr. Dana's statement that these cases are probably convulsive tremor, I supposed that that would be brought forward, and have therefore brought notes of all the cases described by Hammond and will read them briefly.

It can be seen from these that not a single one of the cases recorded by Hammond, excepting those mentioned in the paper, in any way corresponded to the nature of the disease as made up from the ten cases already described. In Hammond's cases there were marked cerebral symptoms, headache, vertigo, and mental excitement; the spasms were not all of the nature of those in paramyoclonus, the limitation of the spasms was not mentioned, and there were motor and sensory symptoms. The same was true of the case of Pritchard mentioned by Hammond.

I have no desire to multiply diseases, but it seems as if here was a group of clinical cases, resembling one another in many respects, and differing from all other groups of cases, and hence requiring both recognition and a name. Freidreich was the first to record a

case of this kind, and the name selected by him was sufficient and should be adopted. I have no theory of the disease to urge, as data for a theory are not yet at hand. My paper had for its object to bring the subject to the attention of the profession and to record a well-marked case.

Friday, Third day, Last session.

The Association was called to order by the President at 10 A.M.

The report of the Committee on Revision of the Constitution and By-laws was read and discussed, and laid over for one year under the rule.

DR. E. C. SPITZKA, of New York, from the committee appointed by the President, asked permission to furnish a minute on the death of Dr. Thomas A. McBride, to be entered in the published transactions. It was granted. (Dr. Spitzka furnished the following memorial note):

Dr. Thomas A. McBride was one of the earliest and most active members of this Association. It is to be regretted that so little of his work is recorded. He was one of those who hesitate to publish, until convinced beyond a possible doubt that their observations are at once novel, useful, and incontrovertible. In this way, many an original clinical study remained buried in his drawer, having been made subsequently elsewhere, anticipating his too long delayed publication. The impress of his mind was, however, liberally affixed to the work of others. The members of the active and progressive circle to which he belonged, were in the habit of consulting him regarding many of their experimental and clinical researches. His advice was always freely and unselfishly given, as his magnificent library, and large armamentarium of instruments were always at their disposal. As might be anticipated from one who was so extremely cautious in publishing his writings, Dr. McBride's contributions to clinical neurology were of the very highest order. They related, in large part, to the use of instruments of precision, and to the analysis and differential diagnostic significance of special symptoms. Some of the best monographs on the latter subject were published as editorials in the *American Jour-*

nal of Neurology and Psychiatry of which he was the founder, and which was discontinued owing to his disability from the disease which ultimately ended his life. It is a melancholy reflection for his surviving friends, that for many years, during which he was recognized as the foremost authority on Bright's disease of the kidneys, on gout and gouty states, he was himself suffering martyrdom from both, and successfully concealed the fact from most of them. The disposition to these diseases he inherited, and his father followed the son to the grave, a few weeks after the latter's death from the same combination of these maladies.

As regards Dr. McBride's personal qualities, language seems entirely inadequate to portray the unselfish devotion, disinterested loyalty, and kindly generosity which he uniformly manifested towards his friends. He seemed to penetrate so thoroughly the innermost personality of those who were privileged to be his intimate associates, that at this day it seems almost impossible to them to realize his death in all its stern reality.

He left with kindly greetings to all of us, knowing that disease had made such inroads on his system, that a return home was doubtful. In large part, his journey was undertaken to supervise the treatment of a number of his private patients, sojourning at Carlsbad. One of them related to me the unselfish devotion to their interests which he showed even at a time when it was no longer possible for him to conceal his sufferings. He knew his fate and met it philosophically. Taking a sphygmographic trace one day at Tunbridge Wells, where he stopped on his return, and the patient asking him the object of the instrument, he took his own tracing in her presence, and said, "yours shows nothing of any serious nature, but you see there is a difference between that one and this one—it is my death warrant, I must leave immediately, if I am to die at home."

At Southampton, while awaiting the steamer that was to take him home, he had two uræmic convulsions, and being removed to the steamer in consonance with his request, slowly sank into coma, and died on the second day

out. He was surrounded by a number of the profession of New York City at the time, as well as by other friends. Every effort was made, every sacrifice promised, to induce the Captain to attempt the bringing of his body to New York. But various obstacles interfered, and he was buried far away from his home in Ohio, on the very spot indicated by the last mark of his busy pen on the ocean chart which he had conned in his last conscious moments; his thoughts impatiently winging their way in advance of the vessel, to the land which he was destined never to behold again.

His profession has lost a member who reflected high honor on it, at home as well as abroad; his aged mother lost one of the best of sons; we have—all of us—lost one of our noblest associates; some of us, our best friend!

The Committee to whom was intrusted the preparation of a brief memorial of Dr. James Stewart Jewell, feel that in his death the American Neurological Association has met with its greatest loss during the thirteen years of its existence. He was one of the founders of this Association, and was its President for the first three years of its existence, from 1875 to 1878. He was always deeply interested in its success, and regularly attended its meetings and took part in its proceedings, until failing health rendered this impossible.

Dr. Jewell was born near Galena, Illinois, September 8th, 1837; he died April 18th, 1887. His early education was limited, but he made up for the lack of opportunity by the energy with which he pursued his private studies. He graduated at the Lind University of Chicago, now the Chicago Medical College; and after practising medicine for a short time in the country, he was appointed Professor of Anatomy, and later Professor of Nervous and Mental Diseases in this College. During most of his life his practice was mainly in nervous and mental disorders.

Dr. Jewell was the founder and first editor of the

JOURNAL OF NERVOUS AND MENTAL DISEASE, and under his management this Journal took a foremost place among medical periodicals, a position which it has since maintained. About one year before his death he founded the *Neurological Review*, but was compelled to give up its publication on account of increasing ill-health. He contributed many valuable practical papers on neurological subjects to this journal and also to other medical periodicals. Probably no man in America possessed a greater knowledge of the literature of neurology and psychiatry than Dr. Jewell. He had by his own exertions become proficient in French and German, and was thoroughly at home in the medical literature of these languages. He took great pride in his library, which was both choice, and large, and in which was to be found almost every recent journal or book of value in the branch of medical science to which he was most devoted.

To other hands will fall the duty of furnishing a complete biography of Dr. Jewell. We, as representatives of that Association of which he was one of the founders, over which he presided, to which he contributed some of his best work, and for which he held a deep affection, simply desire to place on record our high appreciation of his noble qualities of heart and mind. To know him was both to love and respect him. He was of a kind, sympathetic nature, warm in his attachments, charitable in his judgments, gentle in his manners, and highly appreciative of the virtues of his friends.

Some of the older members of the Association will recall the earnest and kindly manner in which he entered into its debates. Always enthusiastic in advancing or supporting his views, he was never personal nor disagreeably aggressive in their expression. Although he did not live out the full measure of his days, he acquired an assured position in his chosen department, and has left behind a name which will not be forgotten by American Neurologists.

(Signed), CHARLES K. MILLS, M. D.
ROBERT T. EDES, M.D.

DR. ISAAC OTT, of Easton, Pa., read a paper on

THE THERMOGENETIC APPARATUS.[1]

REMARKS ON DR. OTT'S PAPER.

DR. E. C. SPITZKA, of New York.—As to the clinical experience derived from the study of tetanus, I would direct attention to the report by Dr. Kinnicutt, of a case of chorea in an adult in which the temperature ran up to 104° F. average, reaching at times 107° F. There was no other reason to account for this high temperature except muscular workings. The case terminated in recovery. Other cases were also reported from literature. I have seen elevated temperature in cases of choreic movements, one in which the temperature rose to 103° F., and that case terminated fatally.

DR. C. L. DANA, of New York, read a paper with the title

ANENCEPHALIA ILLUSTRATING THE SENSORY TRACT.

which included the detailed report of a case, in which the corpora striata and both cerebral hemispheres were entirely absent.

REMARKS ON DR. DANA'S PAPER.

DR. M. ALLEN STARR, of New York.—This paper does not admit of a very exhaustive discussion here, because such sections must be carefully examined before discussion can take place. There is one point, however, on which I wish to speak. Fibres were represented in the drawings as being present in the raphe to a greater extent than I could see them in the specimen.

In my case, there were no vertical fibres in the raphe, and that was the reason that I inclined to the conclusion, pointed by some one else, that the fibres of the raphe unite with the nuclei of the cranial nerves. If these fibres were present in Dr. Dana's case, then my view must be given up, for there are no pyramidal tracts; Dr. Dana's case is rather more valuable than my case because it was possible to observe the spinal cord, and furthermore the condition of the corpora quadrigemina and the crura were more distinctly seen than in my case.

I simply wish to present here four specimens prepared by Prof. D. J. Hamilton, of Aberdeen, Scotland, as they are worth putting

[1] See JOURNAL OF NERVOUS AND MENTAL DISEASE, vol. xii , p. 428.

on record. They confirm in every respect the statements made in my paper, and also to a large extent those made by Dr. Dana.

There were four specimens; one of the pons, one of the medulla, and two of the spinal cord from an anencephalic fœtus five months old, born alive. In the pons and medulla there was a total absence of the pyramidal tracts, and the lemniscus appeared to be about one-half its normal size. In the cord the pyramidal tracts were apparently undeveloped, although there was no such indentation on the surface of the lateral columns as appear in Dr. Dana's and in Flechsig's cases.

At this age, in the fœtus, the pyramidal tracts in the cord are not yet developed in a normal case, so that it is difficult to judge from these specimens whether in such a condition they might or might not develop. But the cases of Flechsig, Dana, Gretschischnikoff and my own combine to prove that in anencephalous brains the pyramidal tracts, which normally develop from above downward, are absent. These cases, with those of Rohon and Hamilton, bring the number of such specimens examined up to six. They are really natural atrophy-experiments according to the method of Gudden and are of much value in tracing the course of tracts through the brain.

DR. E. C. SPITZKA, of New York.—The theory as to the connection of the cranial nerve nidi with the pyramid tract by means of the raphe is an old one, having been advanced twenty years ago by Meynert. It is certainly established that not even a majority of the raphe fibres have this origin.

With regard to Dr. Dana's case, the one omission I regret is the relation between the thalamus and thalamic fibre fields. I think it would be well to thoroughly review that question.

Dr. Dana's proposition, that in such cases as his the centripetal tracts do not suffer atrophy, is entirely too broad. That portion of the lemniscus which is the continuation of the interolivary layer, connected cordwards with the nuclei of Goll's and Burdach's columns, and designated by v. Monakow as the "cortex-lemniscus," atrophies when the cerebrum is eliminated, whether artificially as in young animals, or by disease. I have published a case of the former kind where all efferent tracts and nine-tenths of the cortex-lemniscus were absent.

In connection with the remarks on the lemniscus, I have brought here a section which shows ascending degeneration of

this tract in the thalamic level. Descending degeneration of the interolivary part has been now described in four cases.

I have also here a section which illustrates what might be called a natural atrophy, and in one sense hypertrophy experiment. It is taken through the enormous post-optic lobes and pons of a porpoise.[1] This animal, having no functional posterior extremities, has no columns of Goll and no nucleus of that column. It has no cortex lemniscus, except the bundle from the pes to the tegmentum be so regarded. The lateral lemniscus, representing the continuation of the trapezium and auditory nerve, is immensely overgrown.

I notice in the diagrams passed round—I think it is marked level 12th to 5th—two areas colored red, as if to indicate ganglionic substance in a region which, if I understand the diagram rightly, contains no ganglionic substance. It seems to occupy the region where the bundle from the pes to the tegmentum runs ordinarily.

DR. DANA.—I would like to say with regard to the drawings simply that I think they are very correct. I made them with a great deal of care.

So with regard to the raphe. I am sure it is well developed in the sections at the level mentioned. At the higher levels it is absent.

With regard to the thalamus, I hope to be able to work it up a little more, but I fear that in this case the thalamus is absent; that is, strictly speaking, it was almost of no account.

DR. GEORGE W. JACOBY, of New York, then read a paper on

THE TREATMENT OF NEURALGIAS BY INTENSE COLD.

Since 1884, our methods of applying cold therapeutically have been revolutionized, and this has been accomplished by the introduction of chloride of methyl. Since Débove recommended this agent in the treatment of sciatica, so many cases have been reported that the matter must receive some attention. The author of the paper has reached the conclusion that we posess only two refrigerants which can be easily and practically utilized, and those are the chloride of methyl and the fluid carbonic acid.

The apparatus for using the methyl was exhibited, and the success which he had obtained in its use was sufficient

[1] It was a Dolphin (*Tursiops tursio*).

to warrant its recommendation, but the difficulty of obtaining it and the expense, were obstacles which had not yet been overcome, but probably could be should the demand for it become sufficiently large. Some reference was then made to the literature of the subject and the reports of cases. From his brief experience, his general impression was, that we have in the chloride of methyl a reliable analgesic which does not affect the general condition of the patient, and that it is invaluable in the treatment of neuralgia for the immediate relief of severe pain.

From his experience in the use of the condensed carbonic acid, his conclusions were that, in the absence of the chloride of methyl, it was able to take the place of that remedy in the treatment of sciatica; that the pain is relieved very promptly by its use; but that its curative effect is not as great as that attributed to the chloride of methyl by other observers.

As to the *modus operandi*, he had come to agree with John Marshall, that in very many cases the neuralgic pain is situated in the nervi nervorum, the existence of which have been demonstrated by Victor Horsely, and which are acted upon by the intense cold. Dr. Jacoby, however, was far from believing that the pain in all cases of neuralgia is in these nervi nervorum, and consequently in those cases in which the seat of pain is in the nerve fibre itself, that seat not being so accessible to the freezing process, the pain will necessarily return after a longer or shorter interval.

DR. R. T. EDES, of Washington.—I would ask Dr. Jacoby if he has used rhigolene.

DR. JACOBY.—I have, but have abandoned its use.

In the first place it cannot be sent over a sufficiently large surface, and in the second place we do not obtain the degree of cold obtained by these agents.

DR. C. L. DANA, of New York.—I have used rhigolene in the treatment of burning sensations, and the pains of locomotor ataxia. I have only used it in a few cases, however, and I can simply say that in sciatica it has produced decided relief for a long period of time. But it requires a large quantity of rhigolene, and although

it is cheap, it takes so much that the treatment is, on the whole, rather expensive. My observations, so far as they go, confirm the statements made by Dr. Jacoby, regarding the value of cold in the treatment of pain.

DR. CHARLES K. MILLS, of Philadelphia, next read a paper entitled

REMARKS ON POLIOMYELITIS AND MULTIPLE NEURITIS OF SYPHILITIC ORIGIN.

REMARKS ON DR. MILLS' PAPER.

DR. F. T. MILES, of Baltimore.—As I shall be obliged to leave you within a few miuntes, I would like to say a few words on this subject in which I have been so much interested.

First, with regard to the mixture of multiple neuritis and affections of the cord, since Leyden's paper was published pointing out the frequent error of supposing that we have myelitis when we have multiple neuritis, I think I have seen it several times, and even when both are involved it is difficult to say which commenced first, or to say that they did not begin together.

With regard to the onset, we have many forms which differ exceedingly. Some forms are painful, and others are painless. Some forms seem to pick out the sensory fibres. In some cases I have seen it has been difficult to say at what particular point the nerve was affected, and where there did not seem to be any atrophy of the muscles or degeneration reaction, or at least it did not come on as soon as in other cases. Pain on pressure along a nerve trunk is a very variable symptom in neuritis. There are cases in which we cannot make the diagnosis between central and peripheral paralysis. The best points in these cases are that, if we have paralysis of the muscles with atrophy and degeneration reaction, with loss of sensation, it is most probably neuritis; if we have sensation entirely preserved, it would look like a case of central trouble.

DR. R. T. EDES, of Washington.—I have been very much interested in these two affections. Some who are present may remember that I once reported a case to the Association where there was extensive symmetrical lesion of the anterior columns. The case was one in which there was the usual amount of paræsthesia at the beginning, with rapid paralysis and marked muscular atrophy below the knees and elbows. The case progressed to a fatal termi-

nation. At that time nothing was known about general neuritis, and I found in the spinal cord this lesion. Since that time I have seen a number of cases which somewhat resembled this one, one almost an exact counter-part, but no post-mortem was allowed That case would have been diagnosticated now as one of multiple neuritis.

I think that Dr. Mills is correct in his assumption that the two diseases co-exist—neuritis and degeneration of the cord. Whether it is as he suggests, the poliomyelitis and neuritis existing together, or whether it is possible there should be degeneration of the cells of the cord as the result of the neuritis, I do not feel quite so certain. My impression is, that the neuritis is diagnosticated very promptly; that is, that there is a tendency now to diagnosticate cases as alcoholic neuritis, etc. That I think is going too far, and I should be inclined to accept the criterion of pain to a considerable extent.

The case Dr. Putnam spoke of yesterday, where there was degeneration of the cord without much inflammatory change, with the sequel of pressure neuritis, is interesting in this connection. In the case I reported, the sections seemed to show to some of the members sclerosis in the white columns of the cord. I examined them carefully at that time and have examined them since, and if there is any sclerosis it is very slight.

DR. J. J. PUTNAM, of Boston.—With regard to the connection between multiple neuritis and affection of the anterior cornua of the spinal cord, I have seen cases which have been pronounced to be poliomyelitis which really were of neuritic origin. I had opportunity to make post-mortem in a case where the pain was intense, came on suddenly with paralysis, and although the nerves were not examined at the autopsy, I concede that they were practically affected, and the spinal cord was the seat of inflammatory process from one end to the other, confined chiefly to the anterior columns of gray matter.

I have seen a case where the symptoms were absolutely typical of multiple neuritis, where the cord was examined and appeared to be healthy, but the brain contained a number of spots of softening.

It has seemed to me, as Dr. Mills has suggested, that the different types of neuritis are so many, and differ from each other so strongly and decidedly, that we have to conclude we are dealing practically with systemic diseases, and that under these circum-

stances the corresponding part in the spinal cord will be found to be more or less involved with the peripheral portion of the nervous system; or perhaps one case will show peripheral changes alone, and other cases only changes in the spinal cord; but that there is probably some relation between them.

In a recent number of the *Archives of Psychiatry*, is a paper by Oswald on the subject of lead paralysis, in which he adopts the same view, and speaks of neuritis due to lead confining itself to the motor elements of the peripheral nerves and that the spinal cord is sometimes involved, and that its tunics are affected when no absolute lesion is present, and that possibly and primarily these disturbances of the tunics cause the nerves to suffer.

There is another single point, and that is the matter of absence of knee-jerk, which has been considered as a diagnostic symptom. Several cases have been reported where the knee-jerk was exaggerated in peripheral neuritis, and I can add one or two cases. Whether this exaggeration of the knee-jerk implies a process in the cord is uncertain, and it may be only part of the general condition of hyper-irritability of the nervous system. But the possible error of adopting this as anything like a pathognomonic sign should be borne in mind.

DR. MILLS.—I should like to get the opinions of the members present as to whether or not the presence of tenderness and pain along the course of a nerve trunk with hyperæsthesia can be present, in the absence of peripheral nerve disease.

DR. JAMES H. LLOYD, of Philadelphia.—I would like to say a few words with reference to the electric diagnosis of these diseases. In a somewhat large experience in nervous diseases at the University Hospital, I have attempted to make a differential diagnosis between these two affections, by means of electricity.

I would not draw the conclusions too definite or precise, but it has seemed to me that, in some cases at least, there is this distinction, which I throw out merely as a suggestion.

In neuritis, we get more readily the typical reaction of degeneration than in poliomyelitis; especially loss of faradic reaction in the nerve trunk, and degeneration reaction to the galvanic current n the affected muscles.

I have experimented with Bell's palsy, and taken it as the type of what I have done in multiple neuritis; it is not so well-marked perhaps, but where we have established rapidly the typical reaction of degeneration.

DR. M. ALLEN STARR, of New York.—I cannot agree with Dr. Lloyd in this matter of electric diagnosis. I have taken a great deal of pains, in many cases, in making careful electrical observations, and I have tried to test the point made by Dr. Lloyd in his published paper, but I have not been able to verify it, because the cases vary so much in intensity, and I do not think that from a single examination with electricity we can arrive at any very definite conclusions.

I think that Dr. Mills is correct in some of his conclusions, and I have to admit the concurrence of neuritis and myelitis, also neuritis and myelitis and encephalitis, but the point comes up, can any one lesion explain the symptoms if that be the diagnosis? It seems to me that the important point is, to decide whether the cord is implicated in the maximum way. It seems to me somewhat questionable whether pure poliomyelitis often begins with sensory symptoms. I think that one important point is this. I do not think I can say that I have seen any case of poliomyelitis anterior in which the affected muscles were absolutely symmetrically affected upon both sides of the body; one leg will be more involved than the other. A few muscles will be affected in one leg which are not affected in the other; and on one side the muscles will recover more than on the other. That is not the case with multiple neuritis, where the affection is markedly symmetrical. I do not believe that it is policy to call all recoveries cases of neuritis, for there are undoubted cases of anterior poliomyelitis of a mild type which recover entirely, etc. In trying to make a picture of the disease in the lectures referred to, I excluded all cases except those which had been brought to an autopsy, and the number of cases shows that neuritis is not always favorable in its course, although the prognosis is better than in poliomyelitis.

It is fallacy also to say that a gradual onset always means neuritis, for in some cases of neuritis the onset is sudden, for example, alcoholic and lead cases, and in some cases of infantile paralysis the onset is subacute.

It seems to me, however, that pain and tenderness are very important points in making a diagnosis; and they are the points on which I have laid greatest stress in consultation cases. If there is pain or tenderness, not only along the trunk of the nerve, but in the muscles—and in many cases the tenderness is very marked, and both sides are about equally involved—it is a case of neuritis; for these are not present or are very rare in poliomyelitis, so far as

my observation goes. These with irregular areas of anæsthesia I regard as the most important points in diagnosis.

With regard to Dr. Mills' second case, it seems to me that is probably a case of injury ; a case of paraplegia developing after injury to the spine, without trouble to the arms. I would like to ask whether there were any microscopical appearances which indicated neuritis in that case. I have just made an autopsy in a case of lead palsy in which the gross appearances were sufficient to make it a case of neuritis, but on microscopical examination there was no marked change.

DR. E. C. SPITZKA, of New York.—I was much pleased with Dr. Mills' propositions which are in the main sound, and equally well pleased with Dr. Starr's admission that the cases recorded are too few to base sweeping conclusions on. The uncertainty in differential diagnosis of peripheral neuritis were aptly illustrated to my mind by Dr. Starr's paper—the one quoted by Dr. Mills—scarcely two weeks had elapsed after I have read it, when case records had accumulated which proved the differential criteria therein laid down to be all or nearly all fallacious.

Within four or five months I have seen three cases like the one reported by Kas tin the *Deutsches Archiv für klinische Medizin*, one of them in consultation with Dr. Laurence Johnson. In Kast's case, all the symptoms so accurately aped an acute bulbar paralysis that that diagnosis was made. The patient dying, a careful search was made for cerebral lesion, and none found; the brain, medulla, and pons were absolutely healthy. There was intense neuritis of the nerve trunks whose functions had been disturbed.

In my mind there is no doubt that there has been an extreme tendency to enlarge the domain of peripheral neuritis, attributing obscure disturbances of nerve function to neuritis on the fallacious theory of curability or non-curability. There are fatal cases of neuritis and curable cases of myelitis.

There are scattered records of cases in which even to-day we would look for central disease and where the autopsy showed it, and where the nerve trunks or rather their peripheral expansions were tender. I am therefore not at all convinced that such conditions as Dr. Mills refers to, do not exist.

With regard to the post-diphtheritic neuritides, I would add that it seems to be accepted that they prove the diphtheritic nature of what clinically appeared as a simple angina. It must be remem-

bered, however, that such neuritis has also been recorded as following mumps.

DR. C. L. DANA, of New York.—I have seen cases of multiple neuritis due to alcohol. I believe that alcoholic paralysis is multiple neuritis, and I think that is well established. Certainly, that is almost the rule, without question. In these cases of alcoholic paralysis we find the greatest variety of symptoms, and I have reached the conclusion that it is impossible from objective symptoms to make a diagnosis of multiple neuritis. I place much more reliance upon the fact that multiple neuritis is caused by toxic influences. In alcoholic paralysis we find neuritis alone, and in myelitis we find evidence of myelitis alone ; and in a few cases they have been found associated, but these cases are rare. I was very favorably impressed with Dr. Mills' position, and it seems to me that it is very tenable one to take, so long as there have been so few autopsies in which such changes have been found.

THE PRESIDENT.—I do not wish to unduly prolong this discussion, and will only say that I believe the differential diagnosis between central lesion and multiple neuritis to be a very uncertain one.

DR. MILLS.—I did not wish to deny the frequent occurrence of multiple neuritis, but I wished to help on the discussion, so as to give us, if possible, clear distinguishing points between these two diseases. I do not agree with Dr. Lloyd as to the electrical conditions giving any positive indications. From the nature of the lesion in the two affections, we should have the reaction of degeneration in about the same degree.

I am convinced from a large experience, especially in the Philadelphia Hospital, that poliomyelitis does begin sometimes with sensory symptoms ; or I believe that the truth is that the cord has been attacked by a more general process which becomes limited in a short time to the horns.

With regard to the special question I asked about pain in the nerve trunks in absence of peripheral nerve disease, it is an important one, and an important diagnostic mark. Take cases of brain tumor ; I think most of us will agree that in all but a few cases there are hyperæsthesia and nerve pain in remote places. In certain cases I have demonstrated a tumor at the autopsy and the existence of cortical lesion, and no evidence of peripheral lesion ; in all these cases there were hyperæsthetic regions, and

I have recorded hyperæsthesia as a general diagnostic mark in cases of brain tumor.

As to the absence of knee-jerk, no one could contend that it was evidence of multiple neuritis.

DR. E. D. FISHER, of New York, read a paper on

BULBAR PARALYSIS

and reported a case which he had observed throughout its entire course, and was able to give the microscopical findings after death.

Mrs. H., æt. 29, family history good, no history of syphilis, several children and no miscarriages. In July, 1885, her oldest son was drowned, which greatly affected her; towards November of the same year her family noticed some difficulty in her articulation. I first saw the patient in February, 1886. She then presented the characteristic symptoms of the disease. Her tongue could only be protruded just beyond the teeth, her lower lip hung down, and the saliva was very freely secreted, running from the corners of the mouth; deglutition was performed with difficulty, and it was almost impossible for her to pronounce linguals and labials. There was bilateral paresis of the left palate, but taste, sensation, and smell were unaffected.

There was no paralysis of upper or lower extremities, and the reflexes were normal. Electrical examination showed reduced response to the faradic current, but the reaction of degeneration to galvanism was not present.

The disease confined itself strictly to the hypoglossal nerve distribution and the lower branch of the facial; the latter, however, not being so severely affected. The patient was shown before the New York Neurological Society in the spring of 1886.

This condition progressed but slowly for the next two months. The tongue finally lay motionless in the mouth, all speech was impossible, it becoming necessary to communicate her wishes in writing. Deglutition became more and more difficult, until the patient became much emaciated and died from inanition January 8th, 1887.

Autopsy was made a few hours after death by Dr. M. A. Starr.

The body was extremely emaciated, with marked atrophy of the lower part of the face and of the tongue. On opening the skull, the dura mater was found closely attached to the inner plate, but no adhesions; the brain substance was pale; no capillary hemorrhages or other lesion, however, present.

On the floor of the fourth ventricle the region over the hypoglossal nucleus on both sides appeared depressed, and the nerves themselves small and of a pale gray, translucent color.

Microscopic examination after hardening in Müller's fluid and staining with carmine and after the Weigert method, showed an almost entire disappearance of the cells of the hypoglossal nuclei, with atrophy of the nerves. There was also decrease in the number of cells in the nuclei of the facial, of the so-called lower nucleus of Clark, or the accessory facial nucleus of Ross, lying in a group between the hypoglossal and vagus nuclei.

The 9th, 10th, 11th, and other cranial nerves were not affected. The walls of the blood-vessels were thickened, and there was some increase of connective tissue.

We have had to do evidently, as the history indicated and as the autopsy confirmed, with a case of paralysis of the tongue and the lower lip of bulbar origin, running its course in about one year and a quarter, and brought on, without doubt, by emotional excitement caused by the sudden death of the patient's son. The character of the case is precisely the same as that of ophthalmoplegia externa or progressive muscular atrophy, differing only in the seat of the lesion.

The changes are induced, most probably, by altered blood supply leading to change in the nutrition of the cells; the strictly limited character of the disease being due to the arterial distribution.

Bulbar disease may be preceded by, or less often followed by progressive muscular atrophy, as in the case of a Mrs. N., æt. 38, under my care for a year

and a half. In this instance progressive muscular atrophy was the primary disease, otherwise the progress of the case has been precisely the same as the one just reported.

These cases are unassociated with any cerebral symptoms, and mark themselves out from the cases of pseudo-bulbar paralysis reported, in that the latter are sudden in their commencement, and are accompanied by hemiplegia.

In cases of embolism, thrombosis, or hemorrhage in the pons with bulbar symptoms, the attack is sudden, usually accompanied with loss of consciousness and hemiplegia or paraplegia. The following case, under my care in the dispensary department of New York University Medical College, illustrates this: Fred. D., æt. 35, giving well-marked syphilitic history, reports that two years ago had an attack of crossed paralysis, involving left side of face and right side of the body, and a month later was affected on the opposite side. One year later, patient had a third attack, in which consciousness was lost for four hours, but patient was not further paralyzed. The condition of the patient, January, 1887, was as follows: patient pronounced linguals and labials with great difficulty; the tone was nasal; the tongue could not be protruded beyond the teeth, and deglutition was almost impossible. There was also, however, considerable hemiplegia of the left side. The case is evidently one of hemorrhage first in left lower portion of the pons, and later on the opposite side, following syphilitic disease of the arteries, involving the hypoglossal and facial nerves.

This case, as others reported, differentiates itself from primary bulbar paralysis by the acuteness of its symptoms, the paralysis of the extremities, and by the non-progressive character of its course.

REMARKS ON DR. FISHER'S PAPER.

DR. GRAEME M. HAMMOND, of New York.—I have seen one rather remarkable case of this disease. I exhibited the patient to the N. Y. Neurological Society in 1881, and the disease was then

quite well marked; the paralysis of the lips and tongue. The patient did not die until 1887. In 1884, it was pronounced a case of hysteria by some of the members of that Society, but the patient died with all the symptoms of bulbar paralysis.

DR. THEODORE H. KELLOGG, of New York, read a paper entitled,

HYDROTHERAPY IN MENTAL DISEASE.

The term hydrotherapy embraces every form of internal, as well as external, use of water in the cure of disease. The external use corresponds more nearly with the scope of this article. The author gave a brief historical reference, in which he alluded to the Mosaic law, the Mohammedan, the Arabian, the ancient Greek, the Roman practices with water, and it appeared that, during all these ages, cases of insanity, like general diseases, were doubtless treated more or less in the hydrotherapeutic way. This was so, certainly, with cases in France, Italy, and Germany during the eighteenth century.

The most comprehensive principles of guidance for the practitioner in the use of water as a therapeutic measure may be briefly summed up as follows:

First. Careful physiological experiments have established the effects of hot and cold water on respiration and circulation, bodily temperature, the increase of oxygenation and carbonic acid, the conversion of fat, and changes in the nitrogenous tissues.

Second. Rational hydrotherapeutics in mental, as in other diseases, must consist in the application of these physiological facts to meet symptomatic indications in accordance with the etiology and pathology of each individual case.

The author of the paper then spoke of the various forms of baths and of the other external applications of water, and mentioned special cases of mental disease in which they are indicated; the Turkish bath in cases of insanity. It is a vaso-motor stimulant in all conditions of capillary stasis, as found in the bluish extremities of melancholia attonita, primary dementia, and many secondary forms of insanity,

with torpid circulation. An additional advantage of the bath is the passive exercise of the massage, etc. The Turkish bath, however valuable it may be in many affections, is not to be recommended in anything like a routine way. General contra-indications are all organic diseases of the heart and lungs and nervous centres, and yet, in these various instances, a mild degree of dry heat followed by a tepid spray and rubbing are palliative measures.

The Russian bath is an external nervous stimulant, increasing arterial action and diaphoresis, and answering, in the main, the same indications as the Turkish bath.

The Roman bath is a desirable modification of the bath by inunction.

Mention was also made of the hot and cold water baths, shower baths, which should be cautiously employed, packs, douches, mustard baths, ice-caps, rubber coils, salt-water baths, etc.

To sum up the conclusions, it may be said that the indications of hydrotherapy in mental diseases are to control bodily temperature, to stimulate local and general circulation, to produce diaphoresis and the elimination of certain substances through the skin, to hasten tissue change, to improve general nutrition, to allay irritability of peripheral nerves, to procure sleep, and relieve cerebral anæmia and hyperæmia, and, in a measure, to take the place of drugs.

Balneotherapeutics in insanity are employed empirically as yet, but they deserve a much more extended employment than has yet been accorded to them in this country.

REMARKS ON DR. KELLOGG'S PAPER.

Dr. Ralph L. Parsons, of New York.—I would like to say a few words in commendation and corroboration of the statements made by Dr. Kellogg in his paper. In the use of different forms of baths, extreme care should be exercised in the use of extreme cold or the higher degrees of heat. In either case, it has been my practice, if the bath is at all prolonged, to apply first a moderate degree of heat, and gradually increase it; and so with regard to

the use of cold, commence with tepid and gradually reduce the temperature.

So also, as mentioned in the paper, shower baths should be used with a great deal of caution, and under the direction of the physician himself.

DR. KELLOGG.—I would say that during several years spent in visiting the asylums in Europe, I found that in England, France, and Germany, general use was made of this means, and I have been surprised that in this country the more general use of water has not been adopted. In the use of this measure we are far behind those countries.

DR. C. K. MILLS, of Philadelphia.—During the last eighteen months this measure has been used to some extent in the Philadelphia Hospital, and also in the State Hospital for the Insane at Norristown, and with great benefit in certain cases. In the cases of grave delirium, the cold pack and baths were used, and proved to be of great value. And the method of using warm baths with cold affusion to the head I have seen employed with advantage in a few cases.

The following papers were read by title:

"The Treatment of Progressive Locomotor Ataxia with Rarefied Air," by H. M. Lyman, M.D., of Chicago; "Hemiplegia in Childhood," by Philip Coombs Knapp, M.D., of Boston; "Illustration of Error in Diagnosis of Some Nervous Diseases," by Irvine C. Rosse, M.D., of Washington; "On the Anatomical and Physiological Relations of the Tract Usually Designated as the Column of Goll," by Nathan E. Brill, M.D., of New York.

OFFICERS FOR THE ENSUING YEAR.

President, J. J. Putnam, M.D., of Boston.

Vice-Presidents, Wharton Sinkler, M.D., of Philadelphia, and B. Sachs, M.D., of New York.

Secretary and Treasurer, Graeme M. Hammond, M.D., of New York.

Councillors, George W. Jacoby, M.D., of New York, and Robert T. Edes, M.D., of Washington.

The Association voted to become an integral part of the American Congress of Physicians and Surgeons, and Dr. Landon Carter Gray, of Brooklyn, was appointed delegate, with Dr. Charles K. Mills, of Philadelphia, as alternate, to attend the meeting of the

Conference Committee to be held in Washington in September next.

The Committee on Encephalic Nomenclature was continued, with the addition of Dr. E. C. Seguin, of New York, to fill the vacancy caused by the death of Dr. McBride.

The Association adjourned to meet at the call of the Council.